Canada and Other Lands

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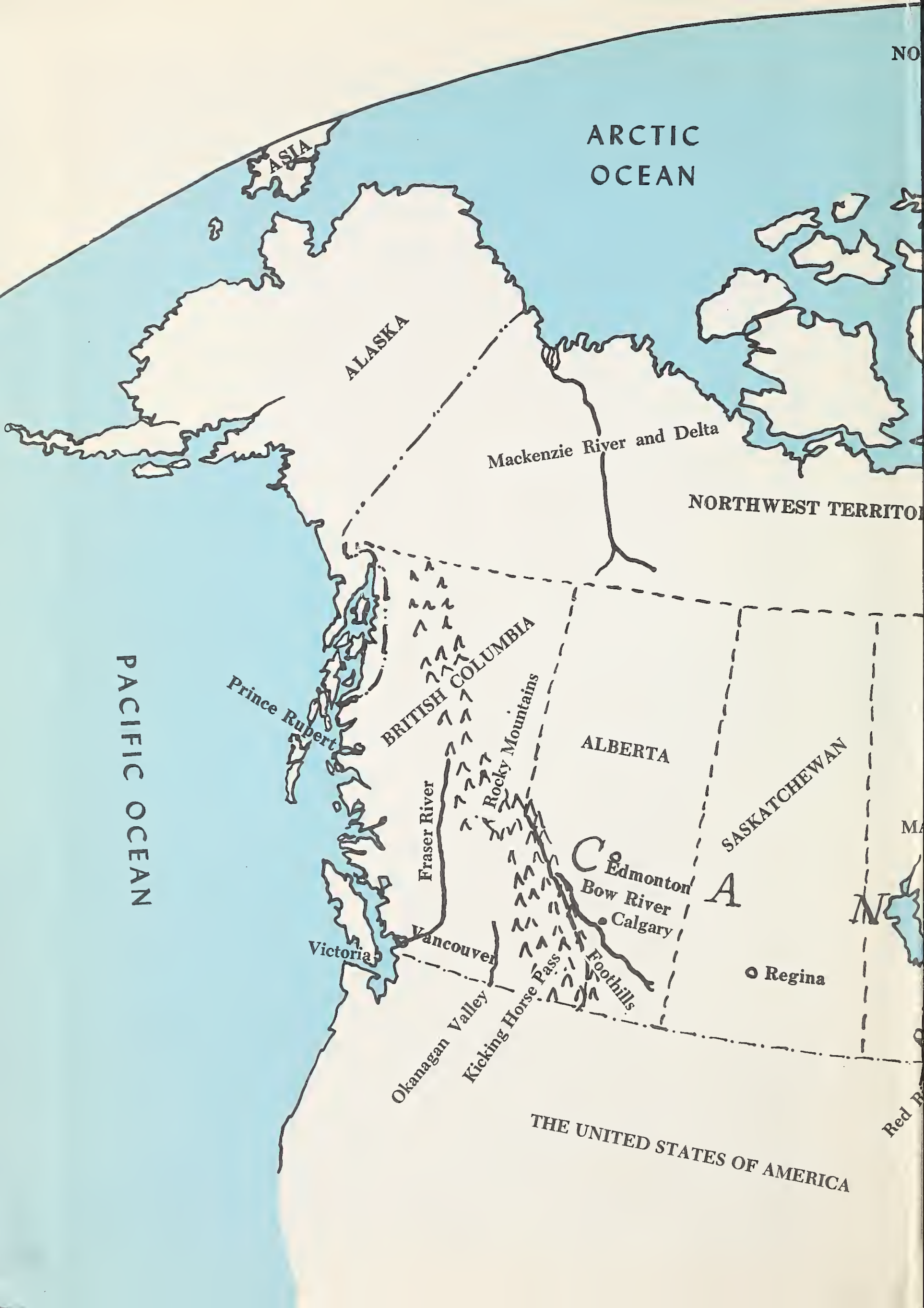
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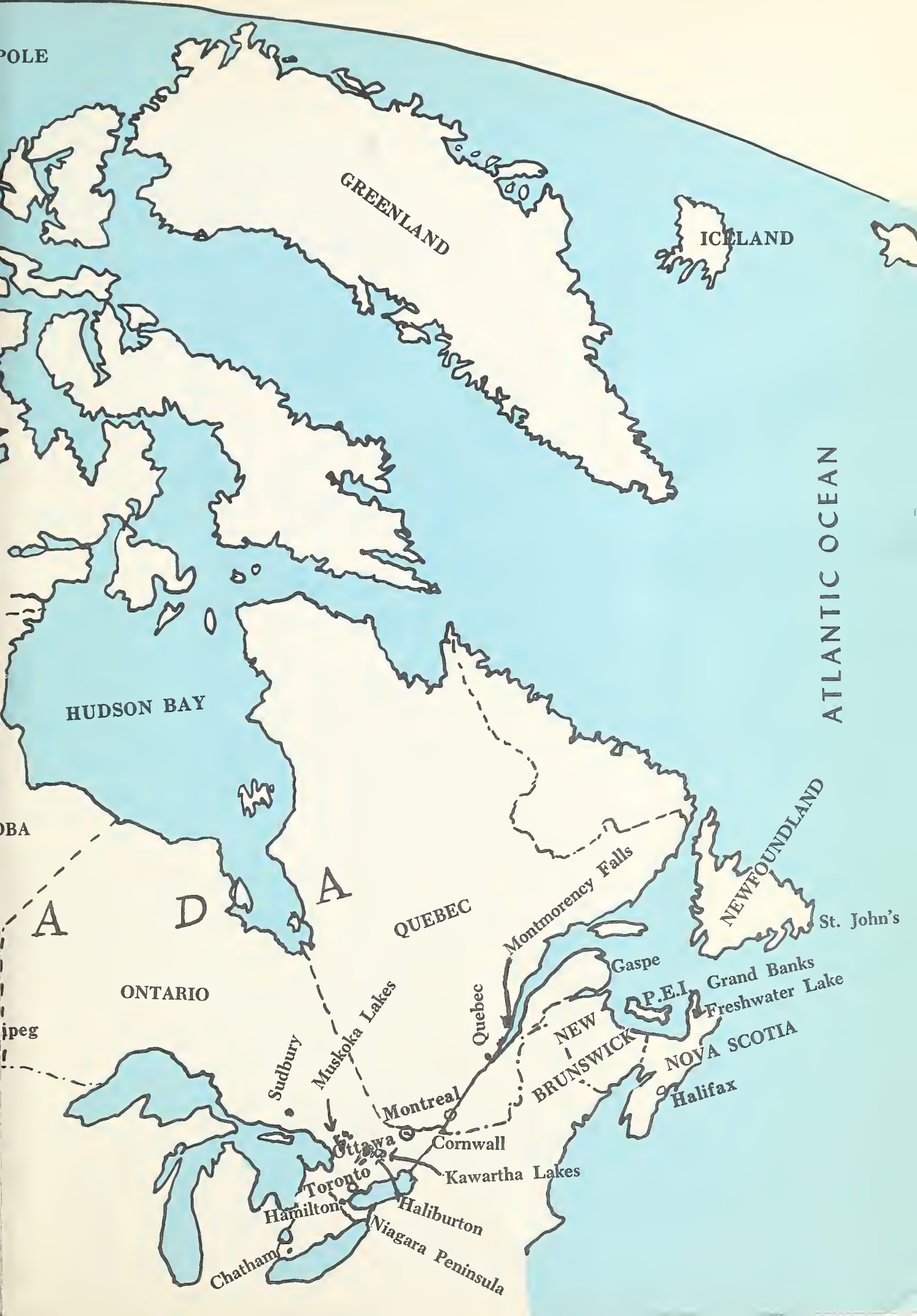
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Canada and Other Lands

Junior Division One

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AILEEN RICHARDSON

THE JOHN C. WINSTON COMPANY, LIMITED
TORONTO

ACKNOWLEDGMENTS

The contributions of the following are gratefully acknowledged:

Miss Margaret Allport, Ontario Department of Travel and Publicity; Mrs. E. Thomas, Ontario Department of Lands and Forests; British Columbia Forest Service; Canadian Pacific Railways; Canadian National Railways; B.C. Department of Agriculture; B.C. Government Travel Bureau; B.C. Fruit Growers' Association; B.C. Department of Fisheries; Alberta Department of Economic Affairs; Ford Motor Company of Canada; General Motors of Canada; Trans Canada Air Lines; Avro Aircraft of Canada; The Bell Telephone Co. of Canada; The International Harvester Co.; Massey-Harris-Ferguson Co.; International Nickel Co. of Canada.

Constant reference was made to "A Canadian Word List", by Stothers, Jackson, and Minkler (Ryerson-Macmillan).

Special thanks are extended to Mr. M. Flood, Managing Director, and to Mr. E. C. Harris, Editor, of The John C. Winston Co., Limited. Without their basic contributions of organization, research and technical skill this book would not have been possible.

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PREFACE

TO THE TEACHER

During the early school years children are concerned mainly with life in the home and the local community. As they enter the Junior Division (9-10 years) this interest remains, but a new development is apparent. The child becomes aware of a wider world, and his concern in it increases rapidly. He can understand other people and ways of life only in terms of his own experience. The resourceful teacher of Social Studies will recognize this and exploit it to the full.

Throughout the year certain general considerations should be borne in mind, e.g.,

1) The basic similarities and the interdependence of people everywhere should be emphasized.
2) Constructive habits of good citizenship should emerge during a study of the ways in which children the world over take their part by helping their parents. Desirable traits of courage, determination, industry, and loyalty should be noted frequently as the material provides relevant examples.
3) The growth of the use of machinery in almost every field of human endeavour should be noted and discussed.
4) A well balanced pride of country should be instilled and the virtues of other peoples should be appreciated. The teacher will not find it difficult to supplement these ideas.

Plan of the Book

If the foregoing are accepted as guiding principles the material here presented should prove to be of maximum value. This book is a teaching tool only. Its value to the child is contingent solely upon the well prepared, thoughtfully motivated, and carefully presented lesson. In a book of this kind it is not possible to enter into too great detail. The approach is therefore general. This method of presentation will enable the teacher to discover interest areas which may be more thoroughly explored by the class, preferably through the project or enterprise.

Part I deals with geographical terms and concepts. It has been said, with justice, that these may best be learned in context. The material may be used as a general introduction or as a review, as the classroom situation warrants. Constant reference should be made to actual land and water forms in and near the local community as well as others with which the pupil may be familiar. Intensive forms of drill in definitions are not recommended. It is suggested that the terms be discussed each time they occur subsequently until mastery is achieved. The use of a story situation has been utilized as a connecting thread throughout the book.

In Part II preparation is made for a broader experience. Simple geographical phenomena as referred to, and the idea of a spherical world is introduced. The globe should be before the class always and its constant use by the pupil should be facilitated. An elementary flat map is developed from an air photo. This concept should be enlarged during the year. Only flat maps of the global perspective type should be used and first reference should always be made to the globe.

Parts III and IV deal with the development of Travel, Transportation, and Communication. The child may thus get ready for the vicarious travels which follow.

Part V describes various communities in Canada. Constant comparisons with the child's own environment should be made. He should be encouraged to ask "Why?" and to seek his own solutions, always assuming that adequate information is provided. This is an introduction to Canada via the community and a formalized organization of material is not recommended.

Part VI draws the year's work to a logical conclusion by outlining certain aspects of life in five geographical areas in other lands. The choice of those covered was most difficult. It is hoped that those chosen will prove to be sufficiently representative. The study of additional areas is suggested, as time permits.

In all Parts are numerous references to Canada. A healthy and absorbing interest in all things Canadian should be stressed always.

Illustrations

Illustrations have been generously provided to serve as valuable teaching aids. Great care has been bestowed upon their choice and placement. Colour has been freely used, to good purpose. Photographs have been employed in order to convey the most accurate information to the pupil. Teachers are urged to make full use of all illustrative material.

Index

An index has been provided to assist the pupil in forming good habits of independent inquiry and by its constant use to improve this useful reading skill.

Readability

Every effort has been made to establish the readability of this book at a level consistent with the ability of an average pupil of 9-10 years. The broad scope of the material presented produces many new words. Care has therefore been taken, in compensation, to explain as many of these as possible in the text and captions, and to maintain a simple style.

Exercises

Suggestive exercises are to be found at the end of the book. Much oral work should be done and group activities should be a regular part of the programme. Objective types of seatwork are left to the individual teacher. The emphasis here is upon new concepts, thought-provoking questions of a general nature, and activities involving individual or group research.

It is hoped that *Canada and Other Lands* will be of assistance to you in meeting the provocative challenge of this most important and interesting phase of the child's development as a citizen of Canada and the world.

The Author

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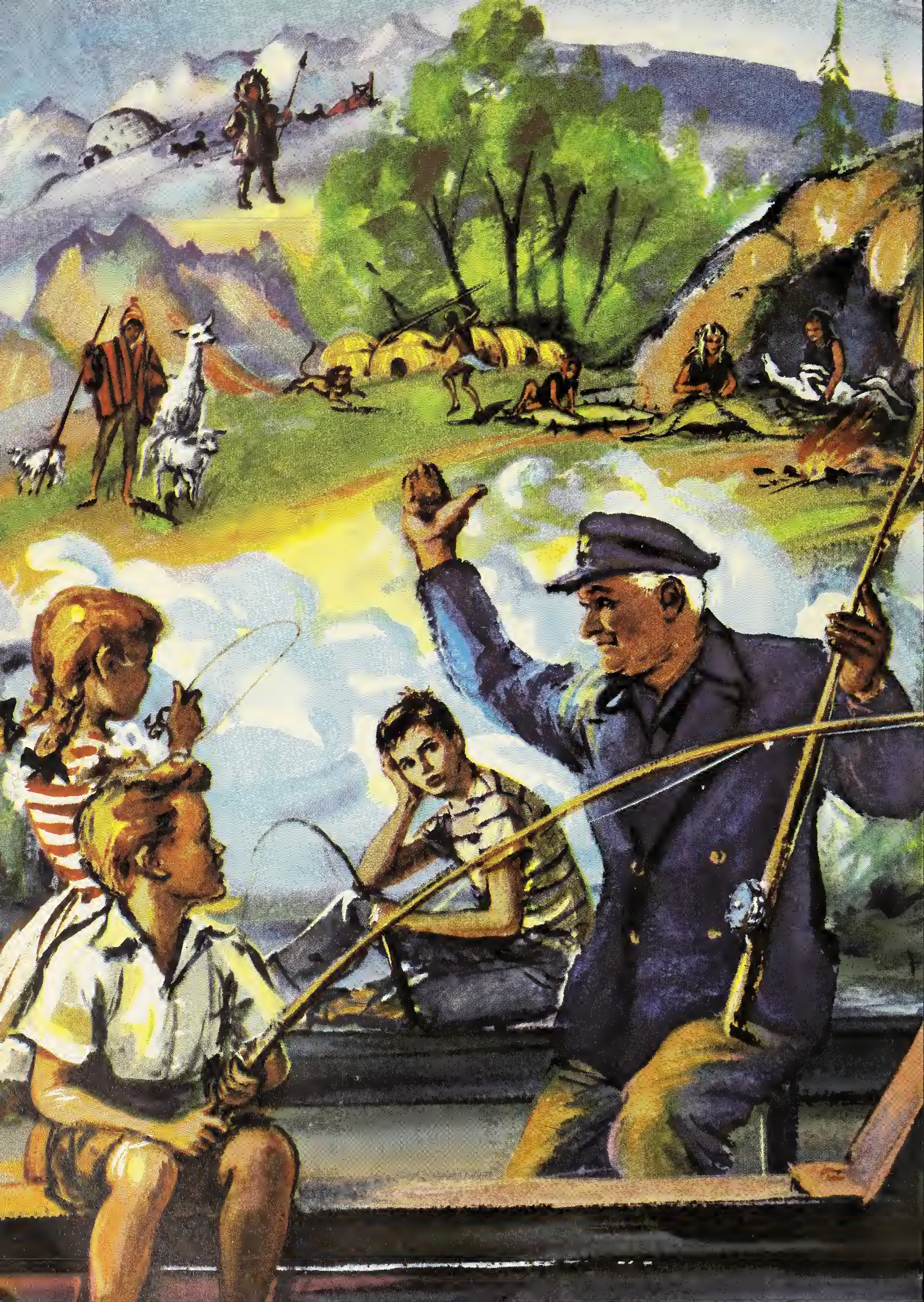


PART I

CAPTAIN ANGUS

Introduction

It was a bright summer morning. The sun was coming up over the trees. The air was fresh and sweet. There was dew on the grass in front of the houses. The main street of Southport was quiet.

Suddenly the stillness was broken. Around the corner chugged a gray jeep. The driver wore a sailor's cap. His face was burned by wind and sun. Beside him sat a beautiful brown and white dog.

Captain Angus and "Skipper" were well known in Southport. They lived in a neat, white cottage across the river. When he was younger the Captain had been in the navy. He had travelled across Canada and had sailed far and wide. Now he stayed quietly in Southport. When the ships were sailing he looked after two lighthouses close by. But he had much spare time. Then he liked to drive his jeep or sail his boat.

The car turned into a side street. Here there was a big red brick summer hotel. People from all parts of Canada came there every year. Southport was a very good place to spend a summer holiday.

"Captain Angus! Captain Angus! We're here."

A boy and a girl came running down the hotel steps.

"Well, hello," said the sailor. "My! how you have grown —and just since last summer. You must be the healthiest twins in all of Canada!"

Betty and Bill East laughed. They were glad to be in Southport again.

"We were on our way to the river," explained Captain Angus. "Hop in and tell me about yourselves. Did you have a good trip from Nova Scotia?"

The twins had much to say. Many things had happened since last summer.

"We're in grade four," said Bill, proudly.

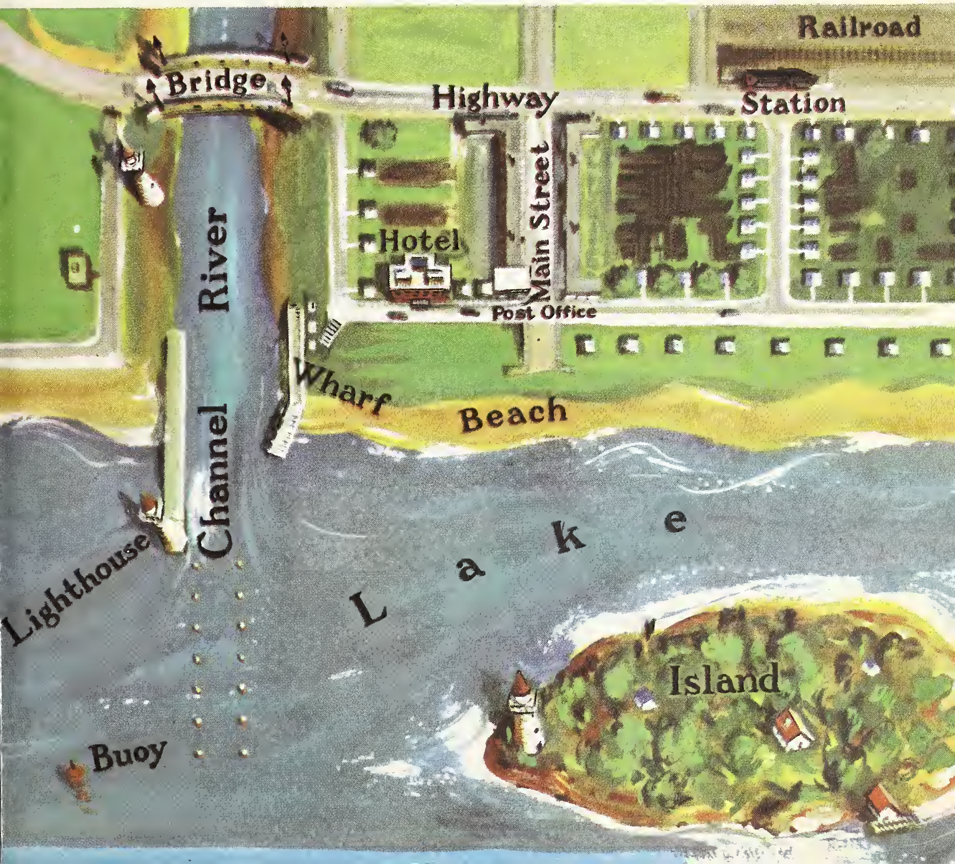
"No!" exclaimed the Captain, as if he could not believe it. "Just think of that. No more fairy tales for you. I'll have to tell you—"

"Real stories about real people and real places," said Betty.

"Look! There's David!" exclaimed Bill, "He came yesterday."

An excited boy ran up to greet them. Again there was a breathless, happy meeting. David West had moved from Southport two years before. His new home was in British Columbia. Each summer he returned for a holiday in his old home town. The three children were about the same age. They had played together as long as they could remember. Captain Angus was very fond of them. They

Southport.


Railroad
Bridge
Highway
Station
Main Street
Hotel
River
Post Office
Wharf
Beach
Channel
Lighthouse
Lake
Island
Buoy

loved and respected the tall, friendly sailor.

"He knows so much," Bill told his father later that morning.

"And he's lots of fun," added Betty. "To-morrow he's taking us fishing."

THE RIVER

Southport Bridge was a good fishing place. Captain Angus and the children were waiting for bites. Betty's red and white cork floated quietly on the water. She watched it carefully.

"My float keeps moving away from me," said Betty. "I have to keep pulling it back. What makes it do that?"

"The water is moving," said Bill.

"That's right," agreed Captain Angus. "The float is in the water. When the water moves, or flows, it takes the float with it. The moving of the water is called the *current*.

"But why does it move?" asked Betty.

Captain Angus asked her to hold out a hand, with fingers together. He then poured a little water into her upturned palm.

"Now tip your fingers slowly toward the ground," he said.

"The water runs off," said Betty.

"And the more you slant your hand the faster the water will run, or flow," explained the Captain.

"Then where the river comes from must be higher than where it goes," said David.

Captain Angus laughed.

"You're right," he replied. "Water always tries to get as low as it can. When Betty's float moved with the current it was going *down stream*. When she pulled it back against the current it was going *up stream*."

"I think I've got a bite," shouted Bill. He pulled up his line quickly. Instead of a float, he was using a lead sinker. It was fastened to the end of his line. Now it was covered with green leaves. But there was no fish.

"The river *bottom* is weedy here," said Captain Angus. "The bottom is called the river *bed*. It stretches from this side to that side." He pointed as he spoke. "The side of a river is called its *bank*. The banks keep the river in its bed. Sometimes the river flows over its banks. Then we have a flood."

"I'm going over near the bank," said Bill. "Perhaps I'll get a bite there."

"It's not as deep here," he called a moment later. "I don't need as much line to touch the river bed."

"Rivers are usually deepest in the middle," said the Captain. "That part is called the *channel*."

Just then a motor-boat passed under the bridge. It followed the channel for some distance down stream.

"It's going to tie up at the *wharf*," said the Captain.

As he spoke the boat steered toward the bank and stopped at a long, low wooden platform.

"I've always called that the *dock*," said Bill.

"So it is," replied the sailor. "Both names are used for a place where ships load and unload."

As they watched, the boat began to move down stream again.

"It's coming to the end of the river," said David.

"The place where the river empties into the lake is called its *mouth*. As you look down stream the banks are farther and farther apart. Our river has a small mouth. Some rivers have mouths which are many miles across," explained the Captain.

"Dad told me that the channel has to be made deeper this year," said Bill.

"That's true," replied Captain Angus. "The current carries soil from up stream. That's what makes the river muddy at times. At the mouth the current bumps into the lake water. This makes it flow more slowly. Then the *silt*, as it is called, falls to the bottom. In time the channel would fill up. In some rivers the silt piles up above the water. When this happens the river parts to make a channel on each side. Some rivers have many mouths. The low, piled-up land at a river's mouth is called a *delta*."

By this time the motor boat was out of sight.

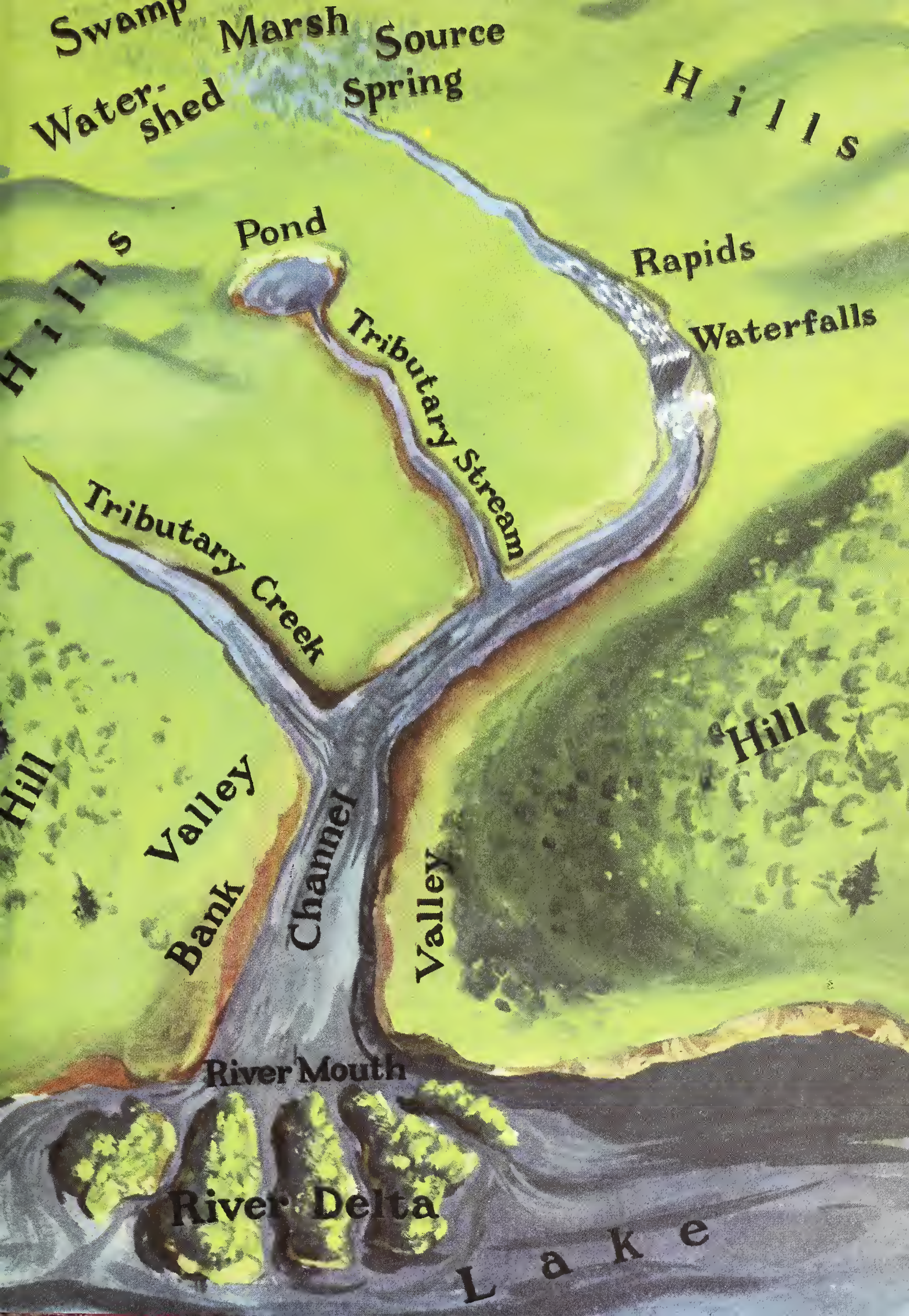
Captain Angus looked at his watch. "It's time to get the mail," he announced. "Who wants to come along?"

As they packed up their lines, David stared up stream.

"What's on your mind, son?" asked Captain Angus.

"I've known where our river goes to for a long time," he replied. "But where does it begin?"

"That's another story," said the Captain. "I'll take you to the *source* of our river to-morrow. Ask your mothers if


Swamp
Marsh
Source
Spring
Water-shed
Hills
Hills
Pond
Rapids
Waterfalls
Tributary Stream
Tributary Creek
Hill
Hill
Valley
Valley
Channel
Bank
River Mouth
River Delta
Lake

you may go. We'll go in the jeep. Meet me at the bridge at nine o'clock and don't forget to bring sandwiches."

And so it was planned.

TO THE SOURCE

Next morning dawned clear and bright. Puffs of white cloud sailed slowly across a blue sky. The air was warm.

At nine o'clock the jeep was at the bridge. Three eager children piled into it. Very soon Southport was left behind.

The road followed the river bank. Soon they came to a small bridge. On it the car stopped.

A creek in Ontario.

"This *creek* flows into our river. You can see its mouth from here." Captain Angus pointed. "A *creek* is a small river," he added. "This one is a branch, or *tributary*, of the big river."

They crossed another bridge.

"Is that a *creek?* asked Betty.

"It's not quite as big as a creek," replied the Captain. "I'd call that one a *stream*, but it's a branch, too."

"Our river is getting smaller," said Bill. "See how close together the banks are now."

The jeep climbed to higher ground. On and up they drove. "Goodness! It's a long way to the source," said Betty.

Captain Angus turned into a lane. Grass grew between the wheel tracks. They came to a wide, open space. Tall grass and reeds grew everywhere.

"I must be careful here," said the Captain. "This land is wet and marshy. See how the tires cut into the soft ground."

"The jeep will pull us through," said David. And it did.

"Some rivers begin in *swamps*. This one is near our river's source. That is a good thing," said Captain Angus. "The soft ground holds water like a blotter. Little by little it runs off. This keeps the river flowing all summer. Without the swamp it might dry up. We'll leave the jeep here."

They found a very small stream or brook, which flowed into the swamp. The Captain followed it for a short way. It led them among small trees.

At last Captain Angus stopped.

"There's the source of our river," he said.

Bubbling out of the ground was a *spring*. The clear, cold water made a little pool. The Captain bent down on one knee and drank from it. The children did the same.

"Best water I've ever tasted," exclaimed David.

"Do all rivers start in a spring?" asked Bill.

"Oh, no!" was the reply. "Some have their sources in ponds. Others begin in swamps."

"I can hardly believe that this becomes our big river," said Betty. She shook her head. "Why, I can step across it."

They returned to the jeep.

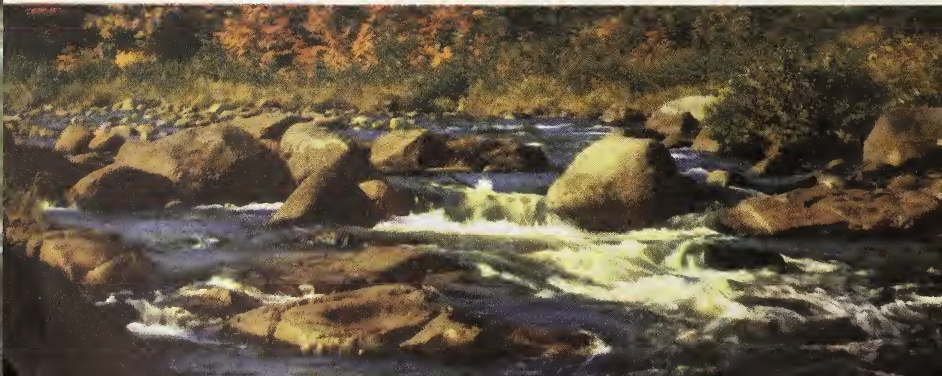
"I'd like to follow the stream from the swamp," said David.

"The jeep will take us," said the Captain. "Hold on."

There was not even a track to follow, but the little car rolled easily along the bank. The ground became rocky. They coasted down a gentle slope. Beside them the stream began to flow more quickly.

The Captain stopped and held up his hand. "Listen," he said.

From farther down stream came a sound of rushing water.



"That current is in a great hurry," said Betty.

They rounded a bend. There were the *rapids!*

The water rushed down a steep slope. In the stream bed were rocks of every shape and size. Around them the water foamed and roared.

"I wouldn't want to swim there," shouted Betty.

"It's far too rapid and dangerous," the Captain called back.

Below the rapids the current flowed more slowly. The river disappeared among trees.

The sturdy jeep bobbed along over a rough track. Suddenly the ground ahead seemed to come to an end.

"Be careful! Don't drive over," screamed Betty.

"Look!" exclaimed David.

Far below them the country spread out for miles. Fields looked like squares on a big checker board. Roads criss-crossed the scene like dusty ribbons. Barns and farm houses peeped from among trees. Here and there sparkled the waters of the river. Far in the distance was the tower of Southport Church. Beyond it shone the blue lake water.

"Oh! it's beautiful," exclaimed Betty.

David left the jeep. Very slowly he drew near the place where the land seemed to fall away.

"Be careful!" called Captain Angus.

The boy dropped to his knees and crawled forward. With great care he grasped a small bush. Then he looked over the edge. For a moment he was still.

"It goes straight down," he called in a small voice.

White-faced, he joined the others. "It's a long way to the bottom," he said slowly. I had a funny feeling when I looked over."

Captain Angus told them that they were on the edge of a cliff. "This rocky slope is very high," he added. "It's like a giant step. Where David looked over, it is very steep. In other places the slope is more gentle. This great step stretches for many miles. It is called an *escarpment*,"

"How does our river get down the escarpment?" asked Betty.

"It must drop over the edge," said David. "I think we'll find a *waterfall*."

They hurried along the top of the cliff, but they stayed well back from the edge. After a short walk they could go no farther.

"Careful! Don't fall into the *gorge*," the Captain called sharply.

Across their path was a wide, deep trench. It stretched

Montmorency Falls. Here the water falls over an escarpment.

Provincial Publicity Bureau, Quebe

back from the edge of the cliff. Its rocky sides were steep. At the bottom flowed the river.

They turned and followed the gorge. The roar of falling water grew louder. Clouds of mist rose from below. The deep cut came to an end. Into it the river crashed in a fall of white water. Under the drop were many jagged rocks.

"Long ago the river began to flow over the escarpment. Little by little the water wore away the rock. Each year it cut back into the cliff. It took thousands of years to carve out the gorge."

"I've seen enough noisy water," said Betty. "Let's go back to the cliff. I'm hungry. I could eat a sandwich."

After lunch they rested under a tree. The three children lay flat on the ground. Their hands held up their chins. Their eyes were on the scene spread out below them.

"What a lot of land the river covers," said Betty.

The Grand River Gorge. Many small trees cover the rock walls.

Ontario Department of Travel and Publicity.

Captain Angus corrected her.

"The river doesn't cover the land. It carries the water away. The river *drains* the land through which it flows. A river and its family of tributaries are called a *river system.* Our river system is very small. There are many in Canada which are much larger. You will learn about them in school later."

"The land drained by a river system is sometimes called a river *basin.* It is shaped like a big, flat bowl. Rain falls into it and flows into the streams, creeks and rivers. Around the edge of the basin is higher ground. It is like the rim of the bowl. On the far side of this top edge the land slopes the other way. This makes the rivers there flow the other way also. They are in their own basin. The high ground divides the river basins."

"Is it called a *divide?*" asked Bill.

"Yes, sometimes," answered the Captain. "It is something like the roof of a house. It sheds water down both sides. That is why it may also be called a *watershed.*"

The Captain looked at his watch. "Where has the time gone?" he exclaimed. "We'll have to hurry. I'd like to go swimming before supper."

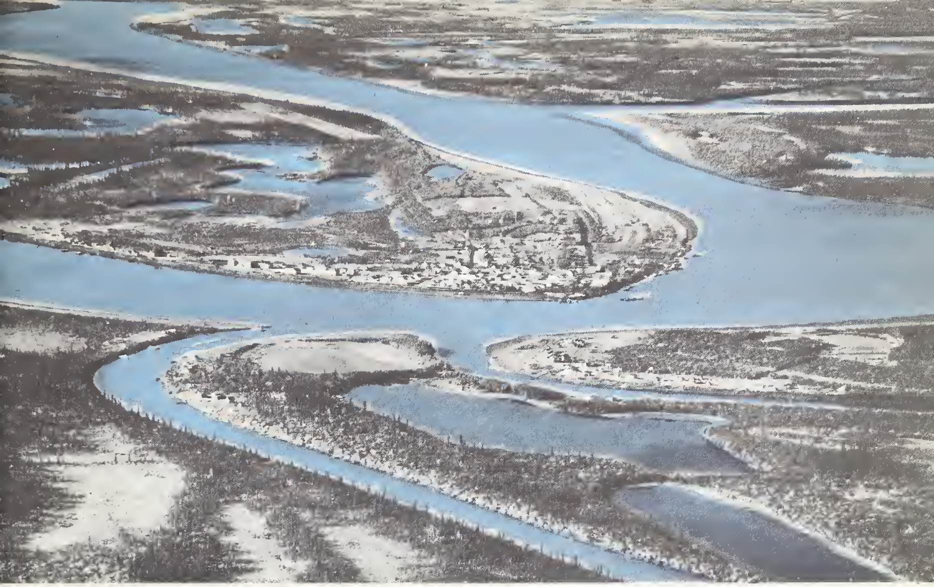
The children had forgotten the time too. They had been busy listening—and learning.

Later that afternoon the jeep rolled up to the bridge.

"It's been a wonderful day," said Betty. The boys agreed.

"Thanks, Captain Angus," they said.

"I've enjoyed it, too," replied the Captain. "We'll talk



National Film Board, Ottawa.

Part of the Mackenzie River Delta. Most deltas are too large to be shown by one picture.

more about it later. I'll see you at the beach."

* * * * *

It was later that afternoon. The four friends sat together on the warm sand.

"To-day we travelled many miles in the jeep. To-morrow I would like to go sailing. Who will be my crew?" asked Captain Angus.

"We will!" shouted three eager voices.

"Good," said the Captain. "The 'Sea-Gull' sails to-morrow morning."

One of the Kawartha Lakes in Ontario.

On The Lake

The 'Sea-Gull' was a beautiful boat. She had a tall mast and snowy sails. Her paint was shining white. Everything about her was neat and tidy. There was an engine for days when the wind was light. Below the deck was a small cabin.

The next morning the three children hurried across the bridge. They could see the 'Sea-Gull' bobbing gently in the river. She was tied to a small dock which the captain had built. On this side of the river the bank was steep. Wooden steps led down to the river's edge.

Skipper greeted them at the top of the steps. The captain's head appeared out of the cabin.

"Come aboard," he called. "Everything is shipshape. We're ready to cast off."

David and Bill helped with the ropes. Betty sat with Skipper on the deck. Captain Angus shoved the boat away from the dock. The engine purred quietly. The 'Sea-Gull' moved slowly down stream.

At the river mouth they passed a long concrete dock. It stretched out into the lake. On the end was a tall building. At its top were windows on all sides. It was one of the Captain's lighthouses. The first light had been a coal-oil lamp. Now at night a strong electric light shone in its place.

They passed the lighthouse. Captain Angus steered the 'Sea-Gull' between two rows of posts.

"They mark the deep channel. Each one is driven into the bottom," he explained. "The river carries down silt. The waves wash in sand from the lake bottom and this makes the channel fill up very quickly."

Soon the channel was left behind. A breeze sprang up. The Captain set the sails and turned off the engine.

"I'll set our course for Lighthouse Island," he said.

Slowly they neared the island. "It seems to be getting bigger," said Betty.

"I see the lighthouse," exclaimed David. "It's a high one."

"Do you see the little white house beside it?" he asked. "That is where the lighthouse keeper lives. He looks after the coal-oil lamp. There is no electricity on the island.

The island light shines far across the lake. It tells the sailors to keep away. Those rocks would soon wreck a ship."

On sailed the 'Sea-Gull'. On one side was the rocky island shore. On the other were the waters of the lake. Betty stared out over them.

"The sky seems to touch the water," she said thoughtfully.

"It doesn't really," said the Captain. "That long line where they seem to meet is the *horizon*. This body of water is very long and very wide. It is a large lake. Where you are looking there is land. It is too far away to see. Some lakes are not much bigger than ponds, but every lake has land all around it."

The sail boat moved on steadily.

"There's another lighthouse!" called David.

"It looks like the other one," said Bill. He had been watching carefully.

"It *is* the other one," said the Captain, smiling.

"Oh! I know," said David. "We've sailed around the island. Just think! What made me forget? An island is land surrounded by water." "I must remember that," said Betty. "And a lake is water surrounded by land."

"I wanted to take you around the island first," explained

The horizon.

the Captain. "Now we'll steer for the *bay*. If we hurry we can go swimming. I'll use the engine. It will drive us along faster. Help me with the sails, boys."

Far across the water they could see Southport. People on the sandy beach looked like specks.

As they moved along, the beach disappeared. The shore became rocky and high. We call this high, rocky shore a *cliff*.

Betty put a hand to her ear. "I can hear a bell ringing," she said.

"It's on that barrel over there," said Bill.

"That's a *bell buoy*," explained Captain Angus. "When the water moves the bell rings. At night there is a flashing light. Under the buoy the bottom is shallow and rocky. The buoy tells sailors that the *shoal* is there."

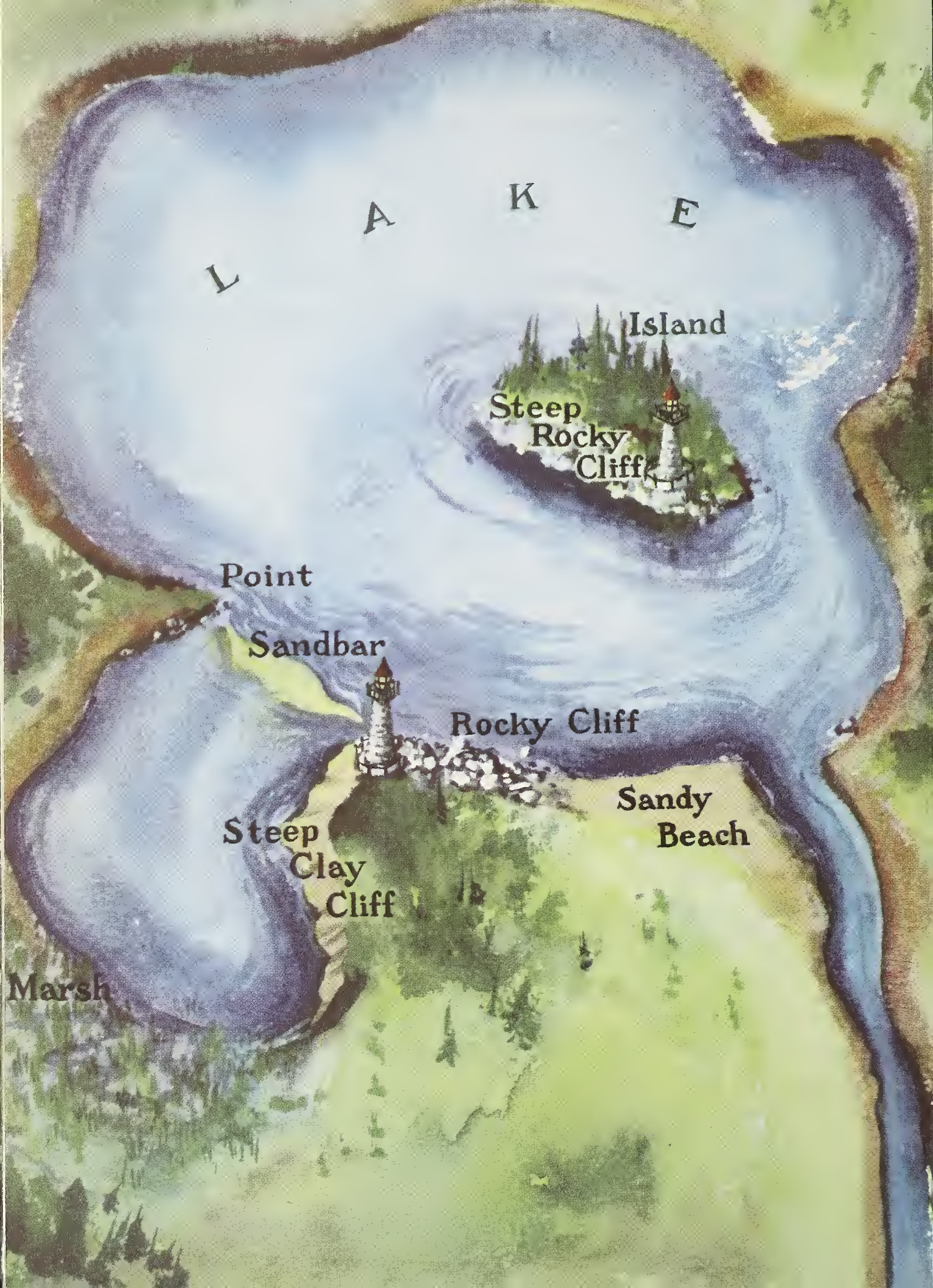
The buoy was soon left behind. The Captain turned the 'Sea-Gull' toward the shore.

"We are coming into the bay," he said a few minutes later.

David climbed part way up the mast.

"I can see well from here," he called down. "The bay has a wide mouth. On one side is a lighthouse. On the other

The steep, rocky shore of one of the Muskoka Lakes.


LAKE
Island
Steep Rocky Cliff
Point
Sandbar
Rocky Cliff
Sandy Beach
Steep Clay Cliff
Marsh

is a pointed piece of land that sticks out from the shore. It is covered with trees."

"Your eyes are good, David," said Captain Angus. "That lighthouse marks the mouth of the bay. On the other side is Pine Point."

"I suppose it is called a *point* because it points out into the water," said Betty.

Waves rolled into the mouth of the bay. Their tops seemed to become heavy. Each wave fell over with a roar. A long line of white, splashing foam stretched across the bay mouth.

"The waves are getting bigger," called Betty. "I don't like the lake when it is rough. It is getting dirty. I like it better when the water is clean."

"The waves stir up the sand from the bottom. They carry it toward the shore," explained Captain Angus. "In the mouth of the bay the waves break. Then the sand falls to the bottom. It piles up across the mouth of the bay. In this way a *sand bar* is formed."

"That is no place for us," shouted David.

"We will keep close to the point," said the sailor. The channel is deeper there."

In a short time the 'Sea-Gull' was in the bay. The water was calm.

"The bay is tucked away into the land," explained the Captain. "The point keeps out the big waves. The bay is a sheltered place for ships."

"I like bays," said Betty. "They are quiet and peaceful."

The sail boat soon crossed the bay. Captain Angus tied up at a small dock.

"All ashore! Stretch your land-legs," he called.

The two boys ran along the beach. Little by little the shore became higher. Soon it towered above them.

"This shore is as steep as the one on the island," said Bill.

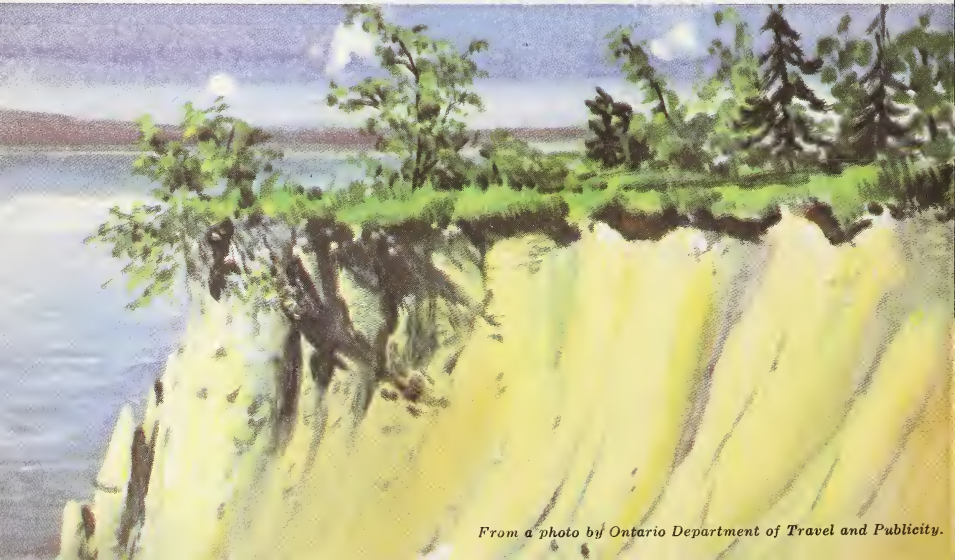
David kicked the bottom of the cliff. A large piece of it fell away.

"It's not rock," he exclaimed. "It's dirt."

"Those are clay cliffs or *banks*" explained the Captain later. "Sometimes we call them *bluffs*. They are not as strong as rocky cliffs. Waves wear them away quite quickly. Those in the bay are sheltered from the rough lake water."

The Captain had brought a delicious lunch. After they had eaten, they visited a cottage nearby.

Steep, clay bluffs at Scarborough, Ont.



From a photo by Ontario Department of Travel and Publicity.

A marsh in Eagle Lake, Haliburton, Ont.

"Every fall I come here to see the ducks and Canada geese," he explained. "The man in that cottage lets me use his rowboat."

"I don't see any ducks," said Betty.

"You would if you were here in the autumn," said the Captain. "I'll show you where I go."

He started the engine. The 'Sea-Gull' sailed carefully along the shore. Soon the beach disappeared. In its place was a wide stretch of tall, waving grass. There were many rushes and cat-tails.

"That is the *marsh*. The land is low and is always covered with water. The ducks and geese rest there. The bottom is soft and muddy. I bring corn to feed them. I must show you the bird pictures I have taken."

"I wish we were here in the fall," sighed Betty.

The Captain guided the 'Sea-Gull' past the point. Soon they were sailing through the waves of the lake. The course

The twins liked to visit Freshwater Lake near their home in Nova Scotia.

was set for Southport. Late that afternoon they tied up at the Captain's dock.

* * * * *

And so the long summer passed. The children spent many happy days with Captain Angus. They travelled many miles in his jeep. They became good sailors.

"You are one of the best crews I have ever had," he told them. "The holidays are coming to an end. The twins will fly back to Nova Scotia. David will be off to British Columbia. Skipper and I will miss you very much. Don't forget to write to me and next summer we'll have more good times together."

TO THE OCEAN

The great airplane roared on its way. The sun shone on its silver wings. Under it the country was spread out like a great rug. Two excited children peered out of a cabin window. Hour after hour they had watched the changing scene. It was their first airplane flight and they were making the most of it!

Lunch-time came. Even then the twins did not want to leave the window.

"Come, now," said Mrs. East. "Look at this delicious chicken."

After the chicken they had chocolate ice cream. It was made in the shape of an airplane.

"I like flying," said Bill to the stewardess. She was a pretty young woman who looked after them well.

"I'm glad you do," she replied, as she took the trays away. "It's the fastest way of all to travel."

"You can see so much," explained Bill, as he turned back to the window.

"Oh!" exclaimed Betty. "There's a lot of water! Is that the ocean, Dad?"

Mr. East looked carefully before he replied.

"No, that is a *gulf*. It is a great body of salt water. Usually it is nearly surrounded by land."

"Is it like a bay?" asked Betty.

"Yes," answered her father. "Usually a gulf is larger than a bay. That one is very big. It is hundreds of miles wide."

"I can see across the gulf," said Betty two or three minutes later.

Mr. East smiled.

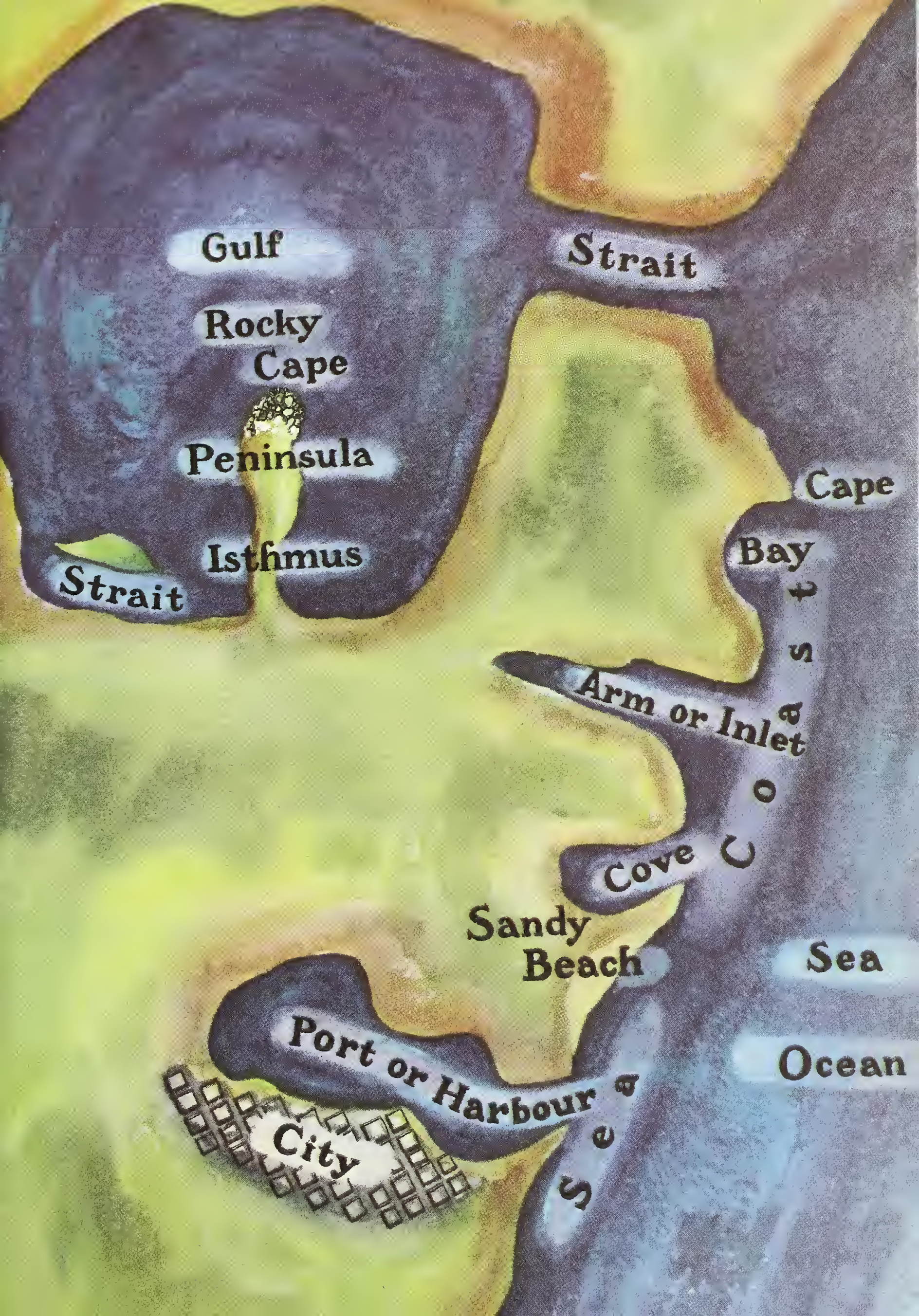
"Even in an airplane you can't see that far," he said. "What you see is a very large island. Between the island and the mainland is a *strait*. It is a long passage-way of water. A *strait* sometimes joins a gulf to the ocean, or a bay to a lake. It could also flow between islands. The strait usually connects two large bodies of water."

Half an hour later Betty pulled her brother's sleeve.

"There's a big long finger of land," she said to Bill.

"Where?" he replied, stretching his neck to see.

"Over there, sticking out from the mainland. See, there's the end of it, near the horizon."


Gulf
Strait
Rocky Cape
Peninsula
Cape
Isthmus
Bay
Strait
Coast
Arm or Inlet
Cove
Sandy Beach
Sea
Port or Harbour
Ocean
City
Sea

"It's very narrow where it is fastened to the mainland," said Bill. "It's almost an island."

"Good for you," said Mr. East, who had been listening. "That's what its name means. A *peninsula* is almost an island. That narrow strip of land which joins it to the mainland is called an *isthmus*. The isthmus connects two large pieces of land."

"It's something like a strait," said Betty. "They're both 'joiners.' The strait joins water. The isthmus joins land."

Just then the stewardess passed.

"That's Rocky Cape," she said, pointing to the far-off end of the peninsula.

"Why, it's like Pine Point near Southport," said Bill. "But it's bigger."

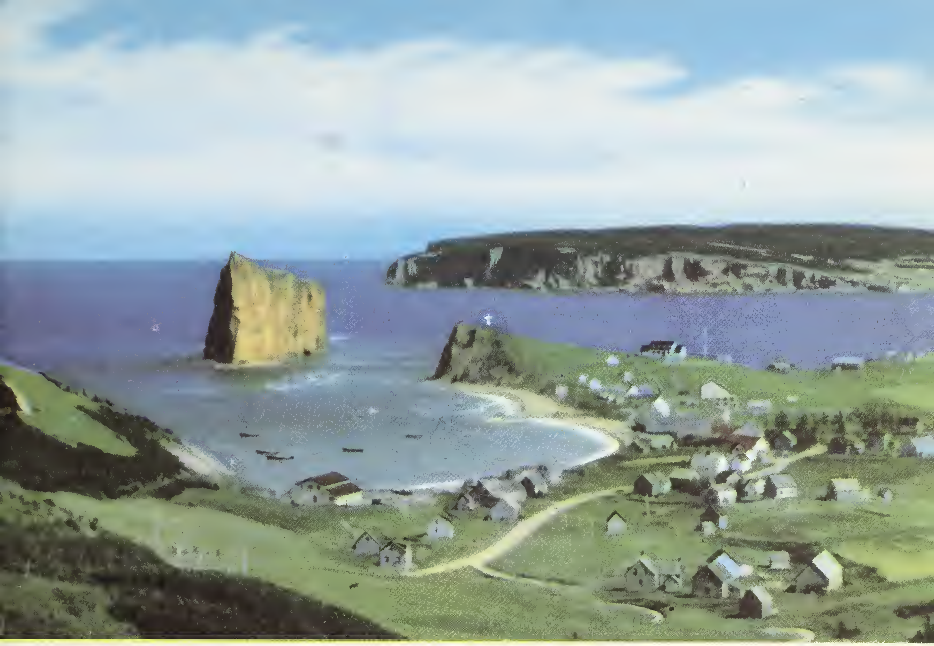
"A *cape* is sometimes called a headland," explained Mr. East. "The cape is like a head. The mainland is the body."

"And the isthmus is the neck!" exclaimed Betty.

The stewardess passed again.

"We land in an hour," she told them. "We're over the *sea coast* now.'

The waves break over jagged, rocky reefs.



A part of Canada's East Coast at Gaspe. Can you find an arm, a cove, a point?

Below them was the shore of the ocean. There it was—as far as they could see. Near the edge the water was foamy and white.

"It's rough to-day," said Mr. East. "See how the waves beat upon the rocks."

"I see a sandy beach," called Betty.

Now they were flying along the coast. On one side was the land. On the other the great ocean stretched to the horizon. The shore was not always straight. It curved this way and that. Here was a little, sheltered bay or *cove*. There was a rocky cape. In some places the sea went far into the land. Mr. East told the twins that this was an *inlet*.

"It looks like a big arm of the ocean," said Bill.

"You're right," replied his father. "We often call the inlet an *arm*."

"The land has a body and a head and a neck," said Betty. "And now the ocean has arms."

"That reminds me," said Mrs. East, "We'll soon be able to stretch our legs. There's the airport."

Their plane circled the landing field. Then like a great bird it touched down gently on the runway.

On the way home the twins were strangely quiet.

"What's the matter?" asked Mrs. East. "Are you tired?"

"No," replied Bill slowly, "I was just thinking. We've had a wonderful summer. I'll miss Captain Angus and Skipper."

"I wonder where David is," said Betty.

"He left Southport before we did," replied Mr. East. "He should be well on his way by now."

An arm of the ocean on Canada's West Coast.

The Bow River Valley in Alberta.

TO THE MOUNTAINS

The wheels are rolling down the track,”
“Clickety-click, Clickety-clack,

David hummed softly to himself. The car rocked gently. He looked away from the window. Beside him sat his father. Mr. West was fast asleep. On the other seat his mother was reading. He turned back to the window.

The land was flat as far as he could see. Farm houses and barns were dotted here and there. They were far apart. Each one was sheltered by a few trees. He saw a car. It was followed by a cloud of dust. The driver waved at the train.

"That's the first person I've seen for a long time," said David to himself. "Dad said it was a flat *plain*. I think it is just plain flat." He chuckled quietly.

Mrs. West looked up from her book.

"What's the joke, son?" she asked.

David told her. Mrs. West smiled.

"This great plain is also called a *prairie*. It is excellent land for farming."

The train thundered over a bridge.

"I don't see any rapids in that river," said David.

"The current is very slow," replied his Mother. "That is because the land is so level. See how the river twists and turns. It is looking for the lowest part of the land."

"A river always does that," said David. "Captain Angus said so."

Great fields of wheat flashed by. The wind made the grain move gently.

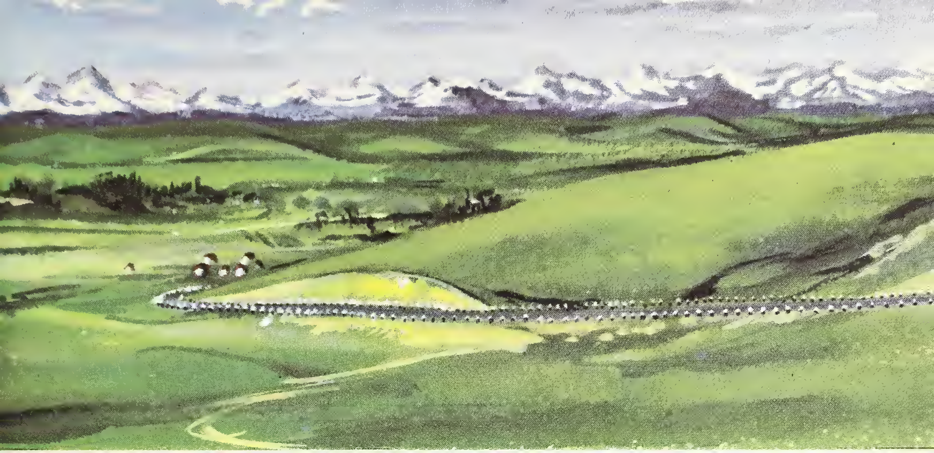
"It's like waves in an ocean of wheat," thought David.

Later that afternoon he noticed a change. "The prairie is not so flat now and I can see hilly ground. It's covered with grass," he told his father.

"We have passed the prairie. There's a herd of cattle," answered Mr. West.

"I see a cowboy!" exclaimed David.

"These are the *foothills*," said Mr. West. "They are at the foot of the great mountains. We will be among the big



The foothills of the Rocky Mountains in Alberta.

ones when you wake up in the morning."

The next day the Wests were up early. Mr. West led the way to a "dome top" car. The dome was a glass bulge on the top of the car. Here they found comfortable seats.

"Now we can see all around," he explained.

"And above and behind," said Mrs. West.

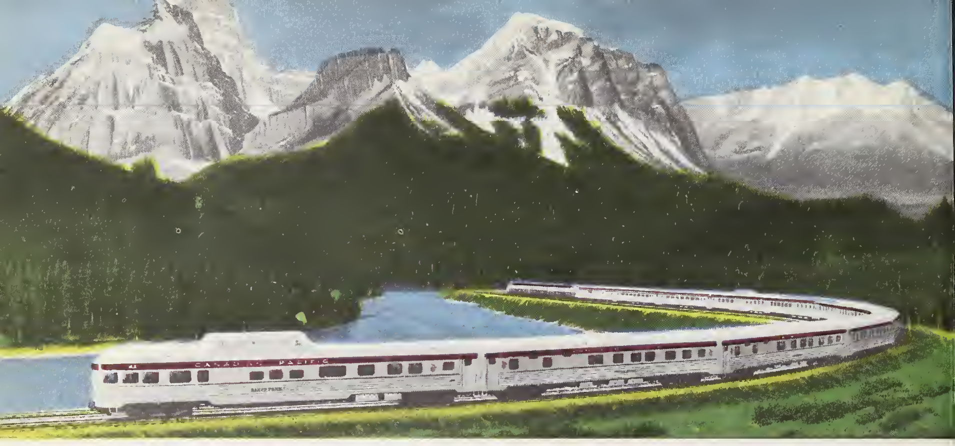
"And straight ahead!" added David.

What he saw from the car made him gasp. Above them towered a great mountain. Its *peak* was covered by a cap of snow. The very top, or *summit,* was covered by a white puffy cloud. One side of the mountain slanted like a house roof. On another side David saw a very steep *slope.* It dropped straight down.

David remembered the escarpment near Southport.

"But this cliff is much higher," he said aloud.

"A cliff as high as that is called a *precipice,*" said his father. "It takes your breath away, doesn't it?"



This is David's train. Find the tree line on the mountain slopes.

As David looked he saw many others.

"The mountains stand in a long row. The line isn't very even, though," said the boy.

"Are you thinking of making it straight?" laughed Mr. West. "This mountain *range* stretches for hundreds of miles."

Every mountain was different. The high ones had snow-covered tops. The edge of each snow-cap could be easily seen. Mr. West called it the *snow line*. Below it there was usually a stretch of bare rock. Then small, bushy trees could be seen. Lower down they became larger. At the foot of the mountain was a great forest. David asked why the trees didn't grow to the summit. His father pointed out the top edge of the trees.

"That's the *timber line*," he explained. "Sometimes it is called the *tree-line*. Above that it is too cold for trees to grow."

A mountain range in the Canadian Rockies.

The train twisted and turned among the mountains. At lunch time it ran beside a stream of clear water. They were in a great hollow. On each side were high mountains.

"What a beautiful *valley!*" explained Mrs. West.

At one end of the valley David could see a waterfall.

Waterfalls on the Bow River, Alberta.

Beyond it was a great mass of snow.

"That's a *glacier*," said a man at the next table.

"What is a glacier, Dad?" asked David.

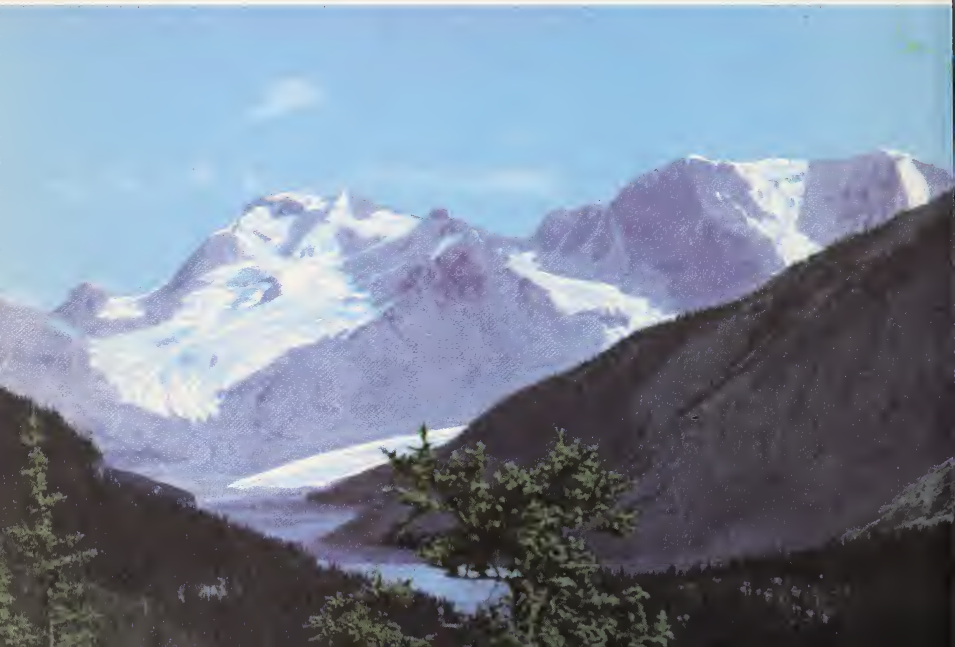
"It usually forms high up on the mountain slopes. Snow falls and becomes packed down. A great, thick sheet of ice forms. This is called a *glacier*. High up, at one end, the ice keeps forming. Lower down, at the other end, it melts. It is like a huge stream of ice. Many a mountain river has its source in a glacier."

David was sorry to leave the green floor of the valley behind.

"It would be fun to live in a valley," he told his Mother.

"How would you like to live in this one?" his Father asked.

A glacier in the Canadian Rockies.



They were passing between steep walls of rock. Beside them flowed the river.

"Is this a valley?" exclaimed David. "It looks more like a gorge to me."

"It does," replied Mr. West. "A mountain valley with high, rocky slopes is called a *canyon*. The river has worn the rock away little by little. But, of course, it has taken thousands of years to do it. Railways and roads often follow mountain rivers. It is much easier to build them on the river banks."

David looked at the high rock walls and mountain peaks.

"I don't see how they could be built up there," he agreed.

The train began to climb higher. On the straight stretches David could see the track sloping upward.

After a long pull they entered a wide, open piece of country. It was quite different from the land through which they had passed.

"Is this a mountain plain?" David asked.

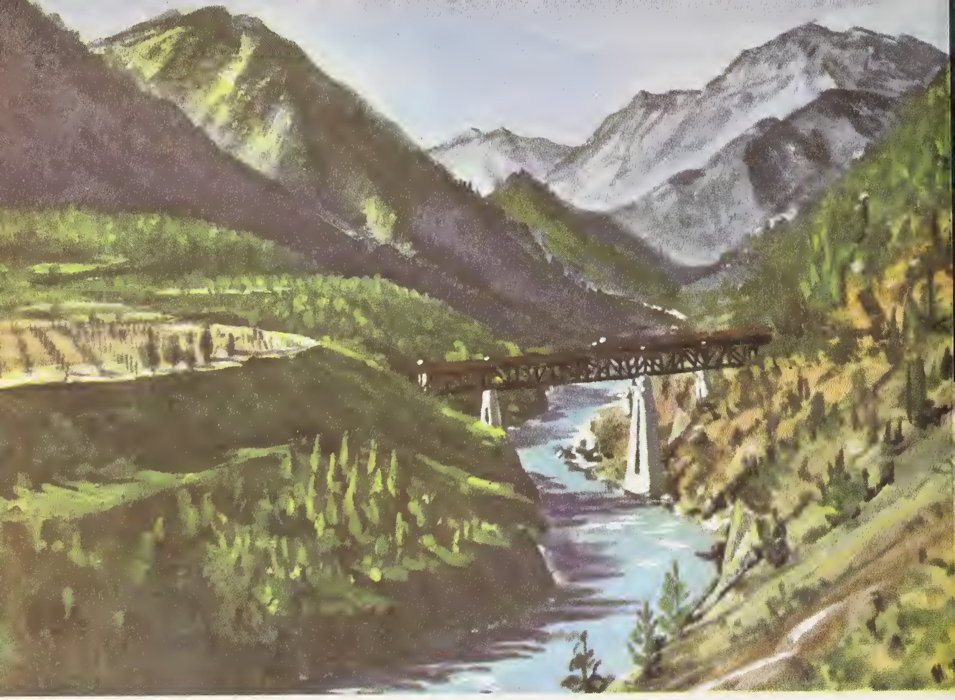
"It's not as flat as the plain," answered his father. "See how rocky and rough it is. This great, high table-land is called a *plateau*."

"I like the green mountain valley better," decided David.

"Not all plateaus are like that one. Some are quite good farm land," said Mr. West.

Far ahead David could see many snow-capped summits. They were piled up like a great wall.

"How will we get through there?" he thought.



The Fraser River Canyon in British Columbia. Find the plateau at the left.

The train drew closer to the great peaks. Still there seemed to be no way out. Was it a dead end? They rounded a sharp bend. Ahead he could see a narrow way between two mountains. The train crawled into it. At every turn another passageway seemed to open up.

"Whew!" exclaimed David. "I didn't think we could pass through here."

"This narrow way over the mountain range is called a *pass,*" said his Father. "Now we are going down the other side of the range. We have passed the *divide.*"

"It reminds me of the watershed," said David. "Captain Angus told us about it."

David's train went through Kicking Horse Pass. The Kicking Horse River flows through the pass. *C.P.R. Photo.*

"That's exactly what it is," said Mr. West. "A divide is a mountain watershed. Back in the mountain valley the river flowed one way, and the train went in the other. On this side of the divide the rivers flow the same way we are going."

The sun disappeared behind the mountains.

"In the morning we will be home," said Mr. West.

"I'm going to write to Captain Angus," exclaimed David. "And to the twins. I wonder where they are now?"

"The Easts will be home, I think," answered his father. "They are on one side of Canada. We are on the other. There are thousands of miles between us. We are a whole *continent* apart. A continent is a very, very large piece of land. Most continents have many countries in them."

"It's a long way," sighed David. Then he smiled as he added, "I hope they find their way back to Southport next summer!"

PART II

LEARNING TO USE MAPS AND GLOBES

By this time the twins and David are old friends of yours. They are back at school too.

You are like them in many ways. You are about the same age and in the same grade. Perhaps you had a holiday at the beach also, but there is another way in which you are alike.

You are all Canadians.

Already you know your home and school. You have learned about the small part of Canada where you live. You have found out many things about the people there. Your community is a very interesting place.

Maybe you have thought to yourself, "How I would like to go to other places!"

This year our story will help your wish come true. You are going far from your own community. You will see other places. You will meet other people.

Before we take a long trip there are many things to be done. This Part will help you to prepare. Let's get ready!

FINDING OUR WAY

Perhaps you have been travelling by car when your father stopped for gas. Did he ask the service station man for a road map? Has your family taken a motor trip during your holidays? Did your father use the map to find the right roads to take? Captain Angus always had one in his jeep. The 'Sea-Gull' never left the dock without maps. Do you know what maps are? Do you know why we need them?

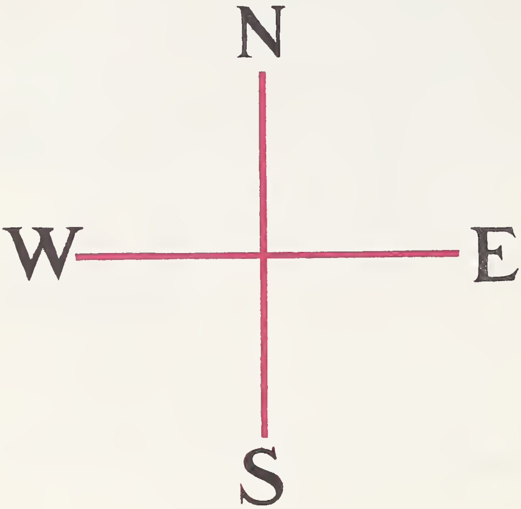
You use a map to find your way to a place you do not know well. One of the first things you must learn so that you can read a map is to know directions.

Learning to Tell Directions

One of the best ways to tell directions is by the sun. Men have been using it for thousands of years.

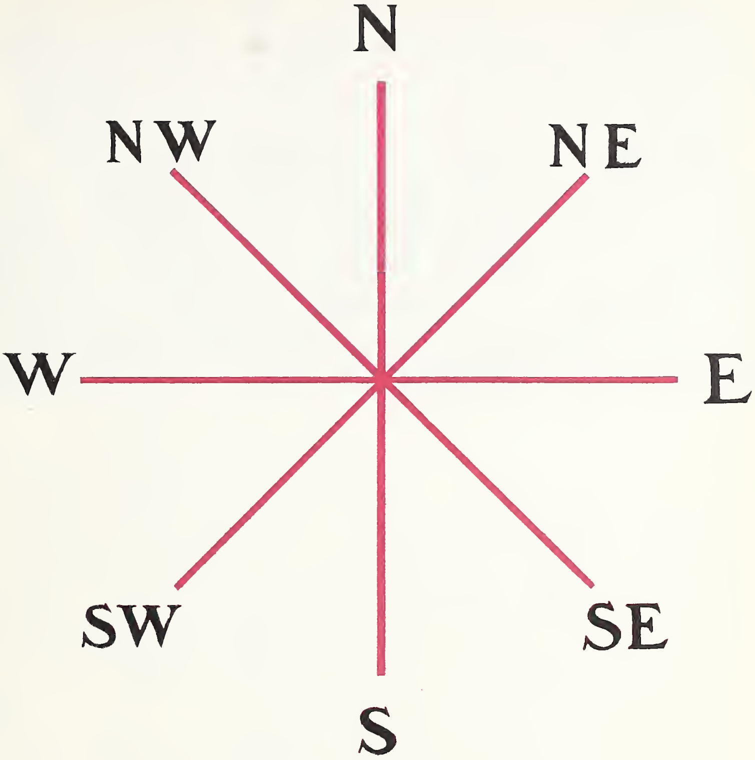
When the sun shines on one side of you, your shadow falls on the other side. In our part of the world, the noonday shadows always point north.

Go outside on a sunny day at twelve o'clock noon. If you turn with your shadow in front of you, you are looking north. Once you know north the other directions are easy to find. South is straight behind you. East is on your right side, and west is on your left side.



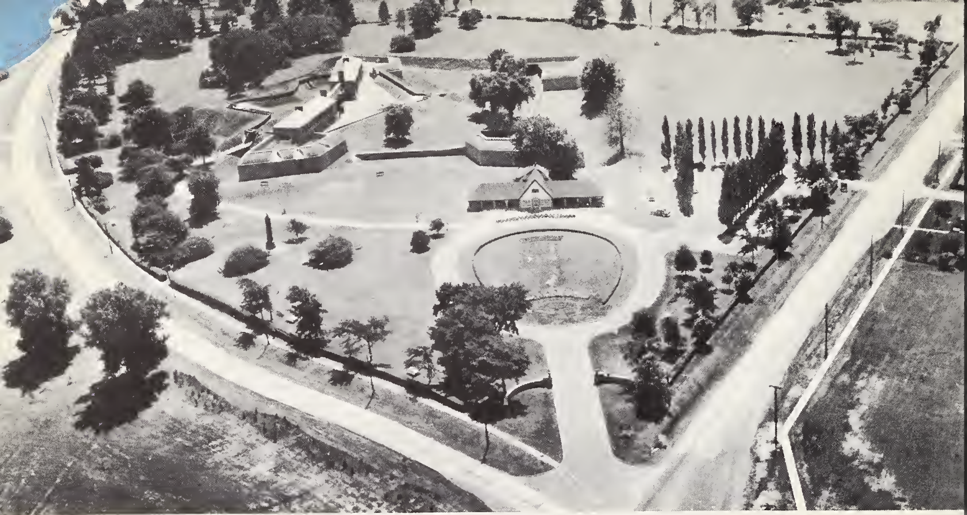
Now lay a large sheet of plain paper on the ground. Spread your feet and stand over it. Face toward the north. On that side of the paper print N for north. On the side behind you, print S for south. On the side nearest your right foot, print E for east. On the side nearest your left foot print W for west. Use a ruler to join the letters N and S, and then the letters W and E.

In between these are other directions. Their names are made from those of the four main directions. North-east (NE) is between north and east. North-west (NW) is between north and west. Where are South-east (SE) and South-west (SW)?



Now you are ready to read directions on a map.

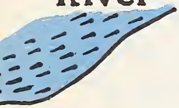
In Ontario is the town of Fort Erie. It was named after a fort which was built many years ago. The fort helped to protect the first white people who came to live in Ontario. David, the twins, and Captain Angus might have flown over Fort Erie in an airplane. If they had taken a picture of the fort from the air, this is how it would look to-day.

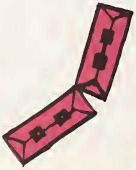


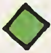
The Photographic Survey Corporation, Limited, Toront

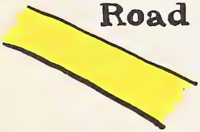
This is a real picture of Old Fort Erie. We do not have to read the picture. We can see the things in it as they really are. We can see part of a river. We can see two highways, a parking lot, a baseball diamond and a monument. We can see a circle road. Facing it is the museum. We can see the old fort and some of the guns.

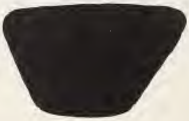
To draw a map of Old Fort Erie, we let simple signs, or *symbols,* stand for things. We can use symbols for some of the things we saw in the air picture.

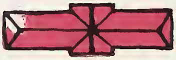





Baseball
Diamond




Parking Lot

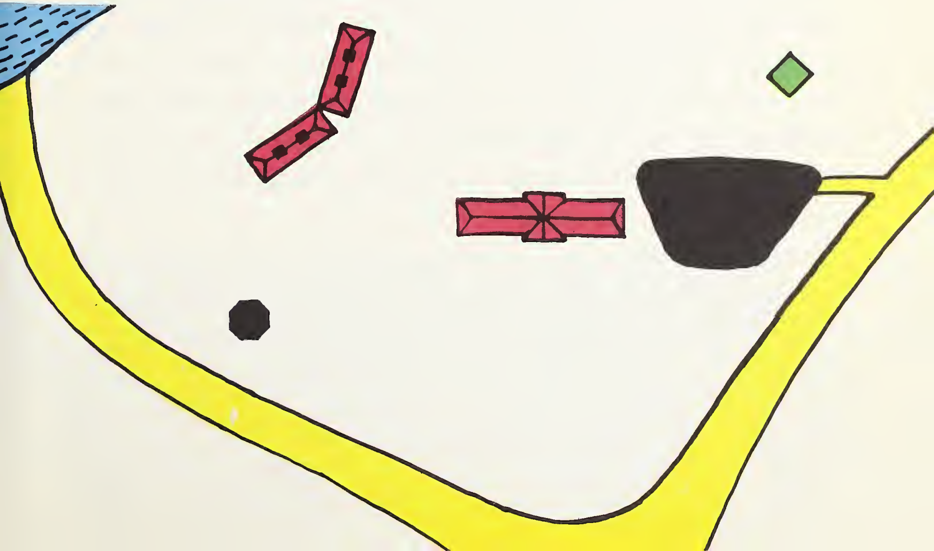


Each of these signs is called a *symbol*. Together, all signs are called a *key*. The key helps us to find out the meaning of the map. When we know what the map means we can read it.

On the air picture find the highway on the right. Find the river on the left. Measure the distance between them. It is about six inches. If you went to Old Fort Erie and measured this distance you would find that it is about three hundred feet. Could you make a map three hundred feet wide? To show this great distance, let one inch on the map stand for fifty feet at Old Fort Erie. Then one inch on the map equals fifty feet on the ground. This is called the *scale* of the map.

If you wanted to make a map of a larger place, one inch on it might equal a mile. If the place was very large the scale might be "one inch equals a hundred miles," or "one inch equals a thousand miles."

Now, using the key, here is a map of Old Fort Erie.



The Globe

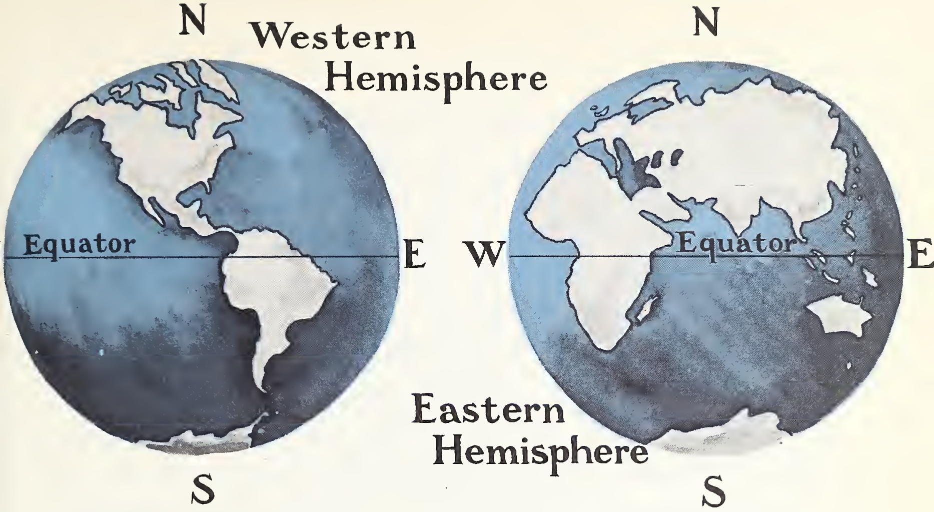
The earliest map makers were the Chinese, the Egyptians and the ancient people of Bible lands. For ages men thought the earth was flat. They drew all their maps flat. These showed small parts of the earth. When some men began to think that the earth was round, a new way of drawing maps had to be found.

The globe is a map. It shows the shape of the earth much better than flat maps because the earth is round. Anything which is round like the globe is also called a *sphere.* A sphere may be as small as a marble or as large as the sun. Oranges and baseballs are spheres. Can you think of any others? The earth is so large that you can see only a very small piece of it at one time.

Map makers wanted to help us to know about real places on the earth. So they used special lines on the globe to guide us. Remember, these lines are only on maps. They are NOT marks on the earth.

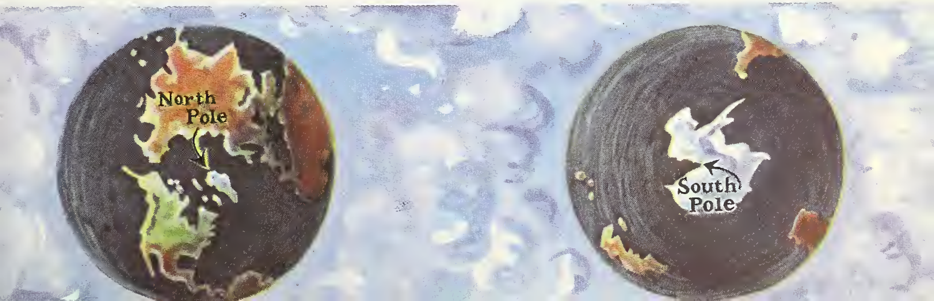
One very important guide line is called the *equator.*

This guide line is drawn around the middle of the globe. It is exactly half way between the farthest north point on the globe and the farthest south point. The point farthest north on the earth is called the *North Pole.* The point farthest south is the *South Pole.* In the pictures that follow, the globe has been cut in half. Now we can see both sides of the sphere at once. Each side is called a hemisphere, or half a sphere. The side on which we live is called the *Western Hemisphere.* The other side is the *Eastern Hemisphere.*


N
Western Hemisphere
N
Equator
E
W
Equator
E
Eastern Hemisphere
S
S

The equator is drawn around the middle of the two hemispheres. If the globe is cut in two around the equator, there are two equal parts. At the top of one part is the *North Pole*. At the top of the other is the *South Pole*.

The two globes show how each half would appear. The whole globe has been cut in half, and there are now two hemispheres. The one with the North Pole in the centre is called the *Northern Hemisphere*. The one with the South Pole in the centre is the *Southern Hemisphere*. Canada is in the Northern Hemisphere. All of the globe north of the equator is the Northern Hemisphere. The Southern Hemisphere is all of the globe south of the equator.


North Pole
South Pole

Day and Night

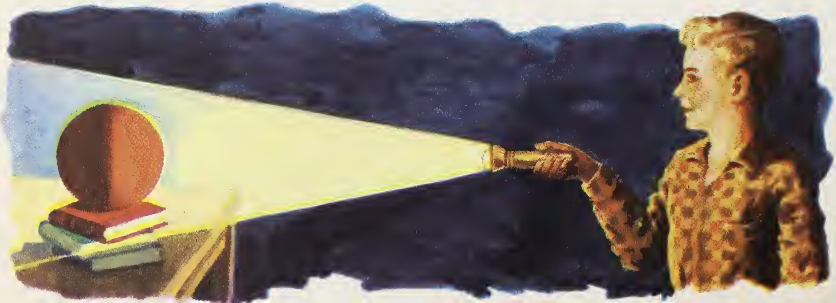
We could not live without the sun. It gives us heat and light. It is always shining upon the earth, but the earth is a sphere. Does it shine on the whole earth at the same time?

Here is a way to find out. Get a globe and a flashlight. Make the room as dark as you can. Place the globe on one side of the room. Then shine the flashlight on the globe from across the room. You will see that only half of it is lighted. The other half is dark. No matter how the globe is turned one half is light and the other is dark.

The sun shines on the earth in the same way. The side nearest the sun is light. There it is day. The side away from the sun is dark. There it is night.

If the earth stood still one side would always have day. The other would always have night. But the earth turns, or rotates, once every twenty-four hours.

Find out the place on the globe where you live. Mark it with a piece of chalk. Turn or rotate the globe from left to right. Notice that it turns in the opposite direction to the way in which the hands of a clock move. When the chalk mark is on the side near the flashlight, it is in the light. Then our part of the world has day. When it is on the other side of the globe, away from the flashlight, it is in the dark. Then our part of the world has night.



In this way all parts of the earth have day and night every twenty-four hours.

The Seasons

Have you ever gone outside to play on a sunny morning? You may have seen the sun coming over the eastern horizon. Perhaps the weather was quite cool. This was because the sun was very low in the sky in the early morning. By the time your mother called you for lunch the air had become pleasant and warm. This was because the sun was almost above your head. Perhaps it was so hot that you had to go into the house. Perhaps you went under the shade of a tree to keep cool. You will remember that this is what Captain Angus and the children did when they had lunch on the escarpment.

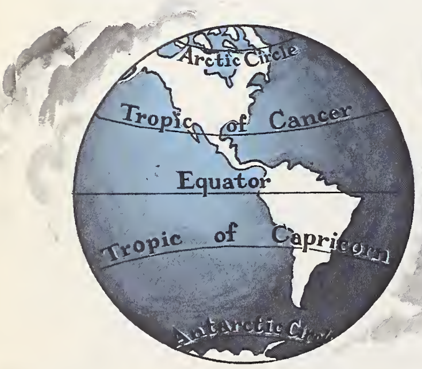
The sun climbs higher in the sky in *summer* than at any other time. Then it shines down on the earth with the greatest heat. In the *winter* the sun stays low in the sky. Then it shines on the earth with the least heat. In the *spring* the sun is as high in the sky as it is in the *autumn*. It is not as high as it is in the summer. It is not as low as it is in the winter. Spring and fall are "in-between" times of the year. In this way the year is divided into four seasons, spring, summer, autumn, and winter. They are caused by the height of the sun in the sky.

Near the equator the sun is high in the sky all year round. Sometimes it is straight overhead at noon. The weather is always very hot there. On either side of the equator, there is a wide belt of land where the sun rises high in the sky for all of the year. The weather is very warm. Map makers have used more guide lines to show the edges of this belt. The guide line on the north is called the *Tropic of Cancer.* Find it on your globe. You will see that this is the edge of the belt nearest Canada.

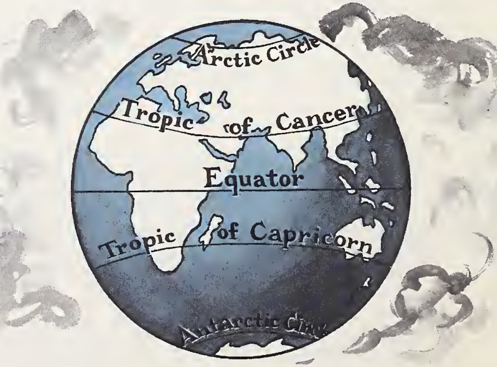
There is a guide line which shows the edge south of the equator. It is called the *Tropic of Capricorn.* Find it on your globe. All the lands in the world between the Tropic of Cancer and the Tropic of Capricorn are in the *tropics.* The weather here is hot at every season. This part of the world is called *The Hot Belt* or *Torrid Belt.*

Around the North and South Poles, the sun never shines from straight over head. During the summer it is low in the sky. The weather is mostly cool. During the winter the sun does not shine at all. The weather is very cold.

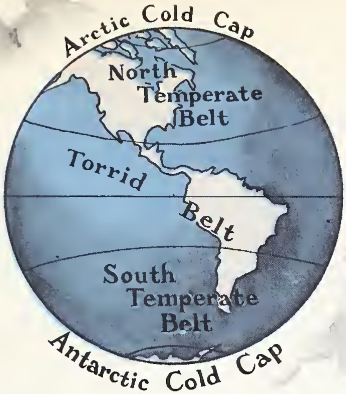
Around each of the Poles is a curved part of the earth. The map makers have called them *Caps.* A guide line is used to show the edge of the cap farthest from the North Pole. It is called the *Arctic Circle.* There is also a guide line to mark the edge of the Cap farthest from the South Pole. It is called the *Antarctic Circle.*


Arctic Circle
Tropic of Cancer
Equator
Tropic of Capricorn
Antarctic Circle

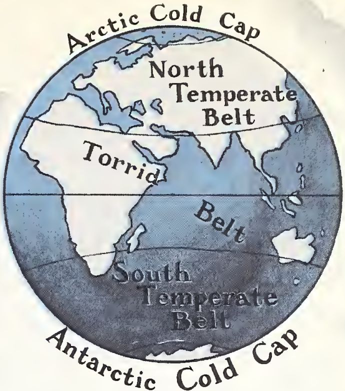
Western Hemisphere


Arctic Circle
Tropic of Cancer
Equator
Tropic of Capricorn
Antarctic Circle

Eastern Hemisphere


Arctic Cold Cap
North Temperate Belt
Torrid Belt
South Temperate Belt
Antarctic Cold Cap

Western Hemisphere


Arctic Cold Cap
North Temperate Belt
Torrid Belt
South Temperate Belt
Antarctic Cold Cap

Eastern Hemisphere

The part of the world between the Arctic Circle and the North Pole is very cold. It is called the *North* or *Arctic Cold Cap*. The part of the world between the Antarctic Circle and the South Pole is also very cold. It is called the *South* or *Antarctic Cold Cap*.

Between the Arctic Cold Cap and the hot Tropics is a wide belt. The sun rises quite high in the sky during the summer. It stays quite low in the sky during the winter. The summers are warmer than those in the Cold Cap. They are cooler than those in the Tropics. The winters are warmer than those in the Cold Cap. They are cooler than those in the Tropics. This part of the world is called the *North Temperate Belt*. Most of Canada is in this belt. The rest of our country is within the Arctic Cold Cap.

Between the Antarctic Cold Cap and the Tropics is the *South Temperate Belt*. Here the weather is very much like that of the North Temperate Belt in which we live.

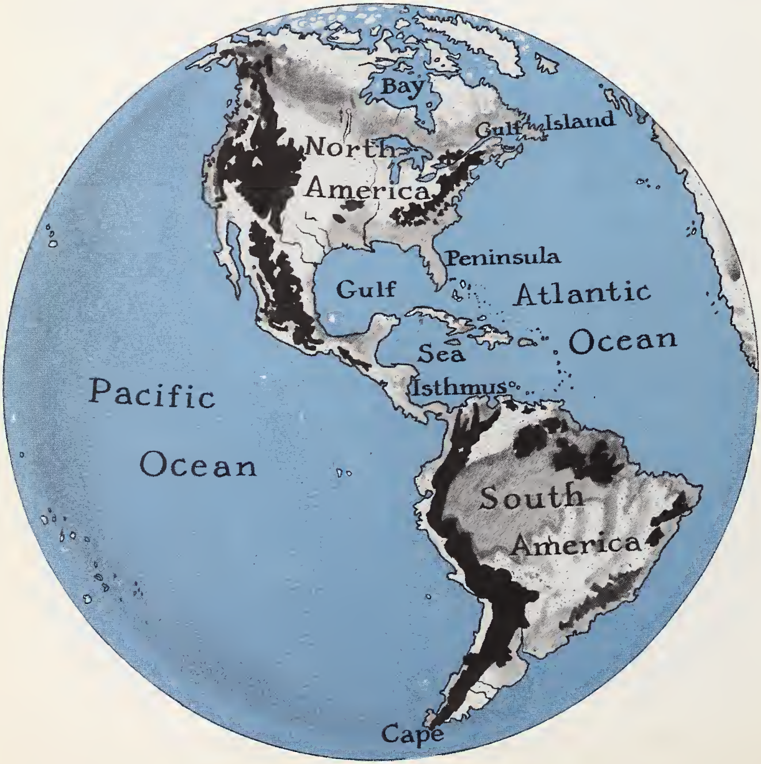
The Continents and Oceans

In Part I David learned about a continent. The twins flew over an ocean. There are several continents and oceans. We will find out their names and see how they are marked on the globe. Captain Angus told the children about the river and the lake. The twins saw the land and water forms from an airplane. David saw others from a train. Many of these are marked on the globes. Try to point out as many as you can.

Globe I

The first globe shows a picture of two continents. The one at the top is the one in which we live. It is called

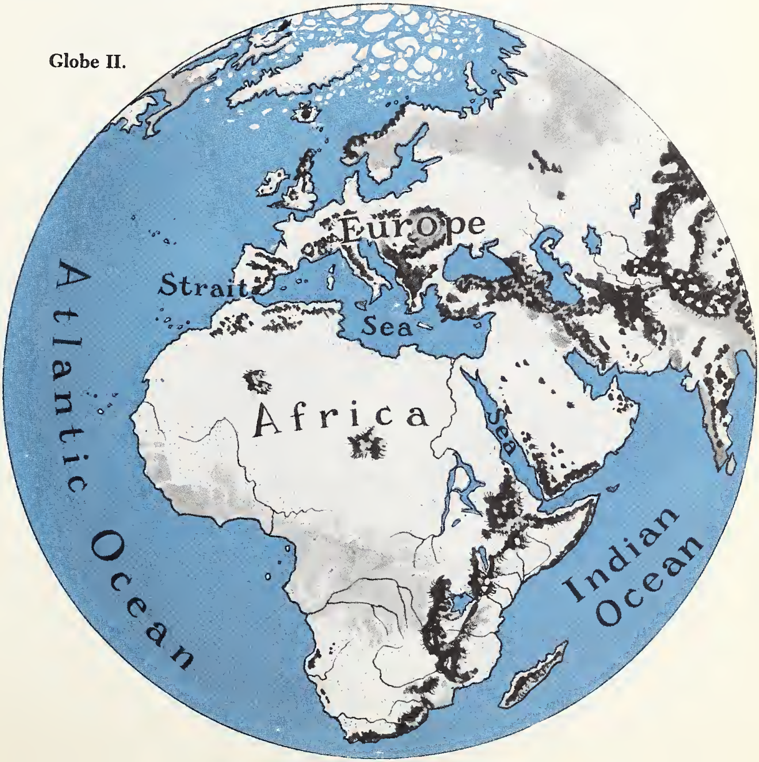
Globe 1 **The black areas are mountains or highlands.**


Bay
Gulf
Island
North
America
Peninsula
Gulf
Atlantic
Ocean
Sea
Isthmus
Pacific
Ocean
South
America
Cape

North America. It is nearest to the North Pole, and is one of the largest continents. The continent joined to North America by an isthmus is *South America.* The great body of water east of both continents is the *Atlantic Ocean*, The ocean on the western side is the *Pacific*. The Pacific is the largest ocean. The Atlantic is the next largest.

This globe shows the Western Hemisphere. Put your ruler across the middle of the globe. It takes the place of the equator. Do you see that North America is in the Northern Hemisphere? Most of South America is in the Southern Hemisphere. How many bays, gulfs, and seas can you point out on this globe?

Globe II.



Globe II

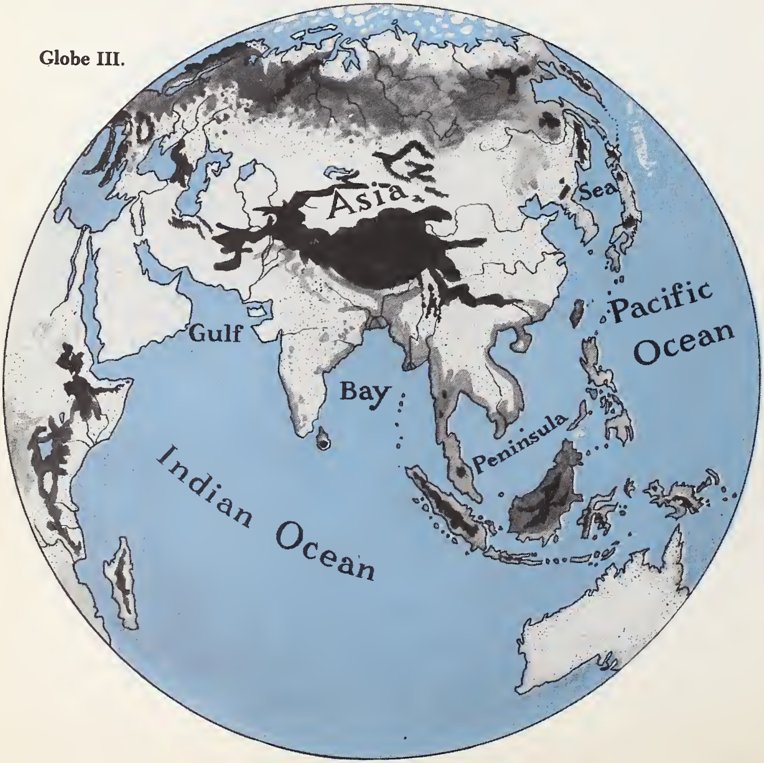
The next globe shows the continents of *Europe* and *Africa*. Europe is the small continent nearest to the North Pole. The other large body of land is *Africa*. It is the second largest continent. Europe is one of the smallest. Between the two continents is a long sea. You will read more about it later. East of Africa is the *Indian Ocean*.

Europe and Africa are in the Eastern Hemisphere. Place your ruler across the middle of this globe. Europe and part of Africa are in the Northern Hemisphere.

Globe III

The huge body of land east of Africa and Europe is *Asia*.

Globe III.

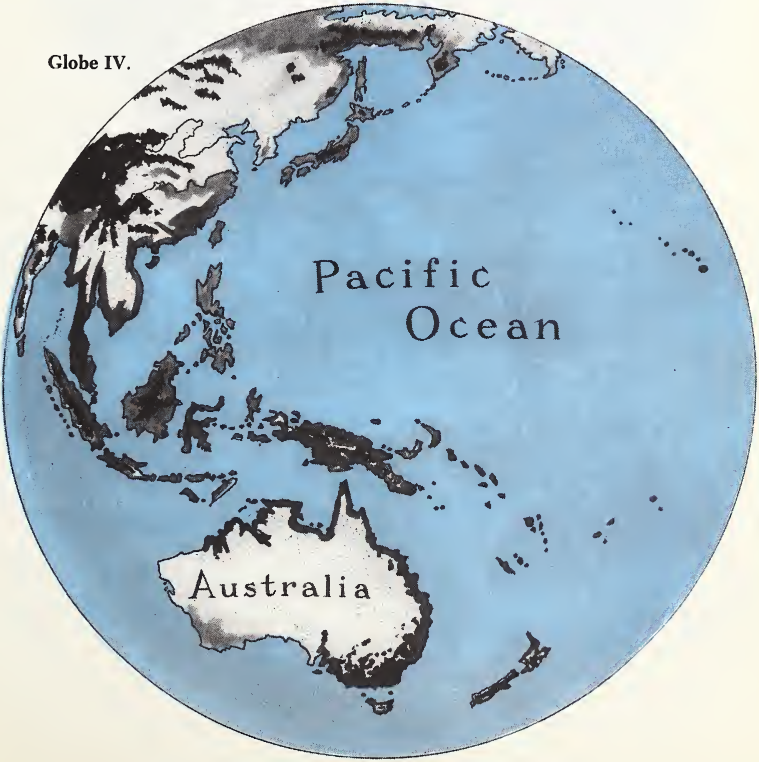


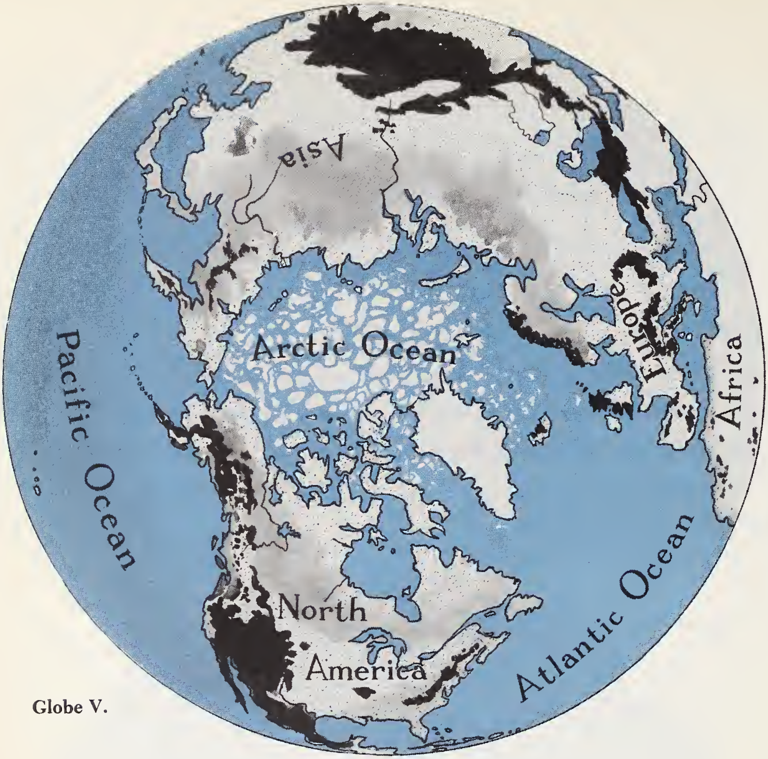
It is the largest continent. South of it is the Indian Ocean. East of Asia is the Pacific Ocean. This great ocean is *west* of North and South America. This is because the world is a sphere. Asia is in the Eastern Hemisphere. Is it in the Northern or Southern Hemisphere?

Globe IV

Southeast of Asia is the smallest continent. It is the island continent of *Australia*. Australia is almost surrounded by the Pacific Ocean. Is it in the Eastern or Western hemisphere? Can you show that it is in the Southern Hemisphere?

Globe IV.



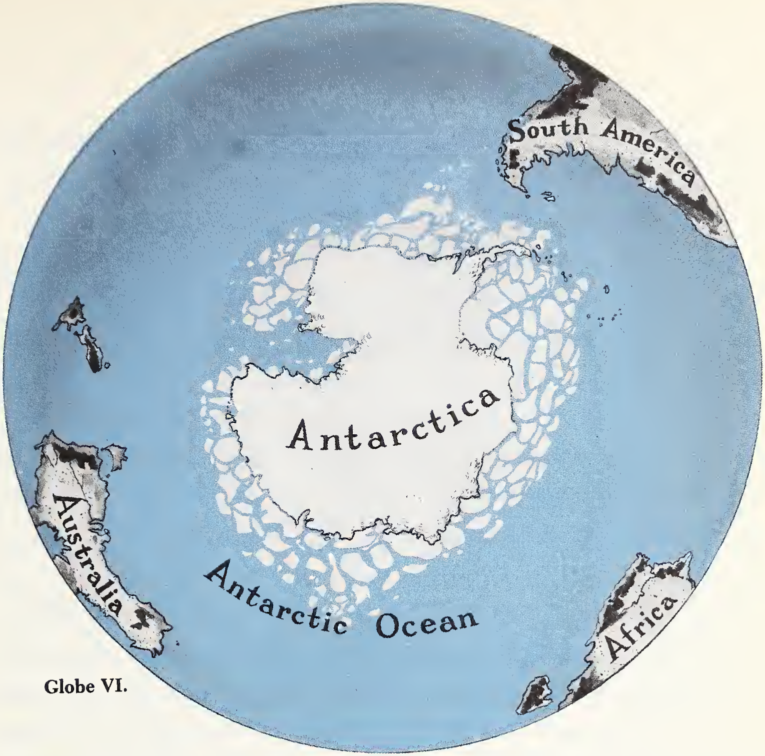

Asia
Europe
Africa
Arctic Ocean
Pacific Ocean
North America
Atlantic Ocean

Globe V.

Globe V

Look down on the globe from the top. The North Pole is in the centre. Here is another ocean. It is called the *Arctic Ocean.* Most of it is frozen at all times. The far north of Canada stretches into the Arctic Ocean. This farthest north part of our land is a part of the North or Arctic Cold Cap.

Much of this globe is covered by the Atlantic and Pacific Oceans. Can you see part of another ocean? The continents of North America, Europe, and Asia are easily seen. Can


South America
Antarctica
Australia
Antarctic Ocean
Africa

Globe VI.

you find parts of two others? In what hemisphere are all of these continents and oceans? Did you notice that the continents seem to have a different size and shape on this globe? This is because you are looking at them from a different direction.

Globe VI

Now turn the globe over. The South Pole is in the centre. Around the South Pole is the continent of *Antarctica*. It is an island. What other continent is an island? Antarctica is the third smallest continent. A great mass of ice covers almost all of it. It is in the Antarctic Cold Cap. Around this continent is the *Antarctic* Ocean. In what hemisphere is this part of the world?

The Flat Map

The road map which Captain Angus uses is a flat map. The map of Old Fort Erie is a flat map. If the world is round, how can we use flat maps? Why do we want to use them?

The only true map of the world is the globe. But flat maps are easy to make and handy to use. A flat map can be rolled up when it is not being used. It can be folded and carried in a small space. Could you do this with a globe?

Cut a piece of paper the size of a postage stamp. Place it on the side of your globe. The paper seems to lie flat even though the globe is round. This is because the part of the globe it covers is very small. If it could be cut out of the globe, the piece would seem flat. Your Father's road map or the map of Old Fort Erie would cover even a smaller part of the globe.

It is not easy to show the whole globe truly on a flat map. Many map-makers have tried.

Here is one way. It will help you to understand what has to be done. Perhaps you can work with several other children.

First get a large, hollow rubber ball. Make a very small hole in it to let out the air. Try to flatten the ball. No matter how hard you press, some part of it bubbles up.

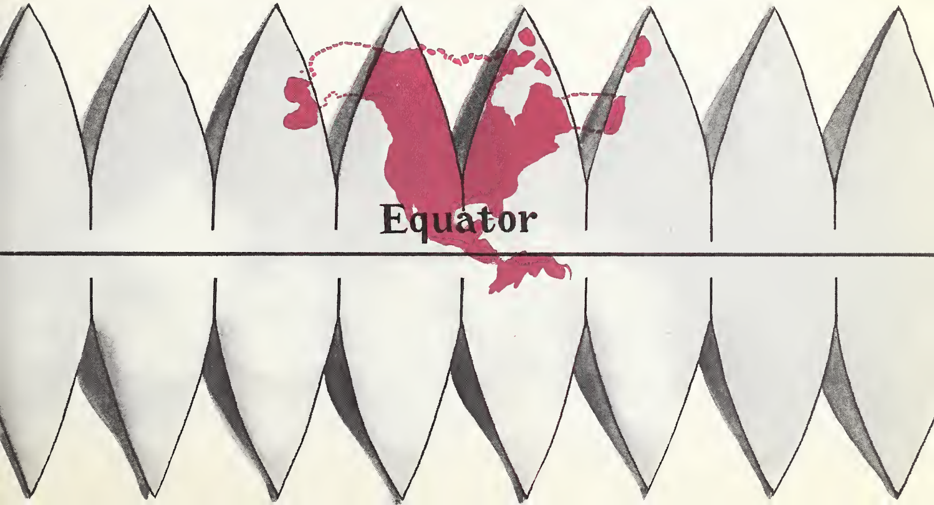
Now draw a line around the middle of the ball. This will stand for the equator. Mark off eight nearly equal spaces on this line.

Mark a point on one side of the ball to stand for the North Pole. Place another mark on the other side of the ball. This will represent the South Pole.

Toward the top of the ball draw the rough shape of North America. Use a crayon for this. The outline of the continent does not have to be exact.

Next draw a straight line from the North to the South Pole. Make the line go through one of the marks on the equator. Carefully cut along this line with a pair of scissors. Now make seven more cuts from the North Pole. Each cut should go ALMOST to a mark at the equator. Turn the ball over and make seven more cuts from the South Pole. Make each cut ALMOST to the equator. Do **NOT** cut across the equator.

Now spread out the ball, like the one in the illustration.



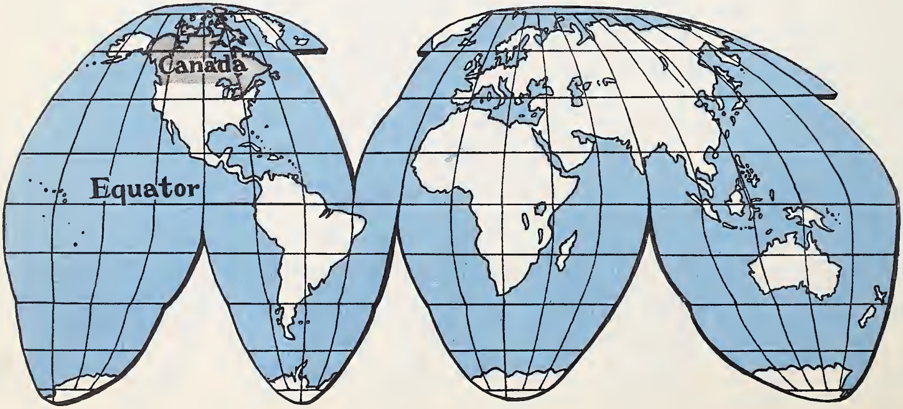
What has happened to North America? The cuts have sliced down into it. It is spread apart. The map-makers used this way to draw maps of the whole world. The hollow rubber ball is like the covering on a globe which has the continents and oceans drawn on it. When the covering was spread out they joined the broken lines, and there was a flat map.

But you can easily see that North America is out of shape. The only part which is not changed is that near the equator. For this reason the map-makers were not satisfied. They have tried many other ways.

For example, the covering on the globe can be divided through the oceans only. The continents are not cut at all. They are not spread apart. Their shape is not changed. In this way a very good flat map can be made. But you will see that something *does* change. It is the size of the oceans. Using this way they are spread apart.

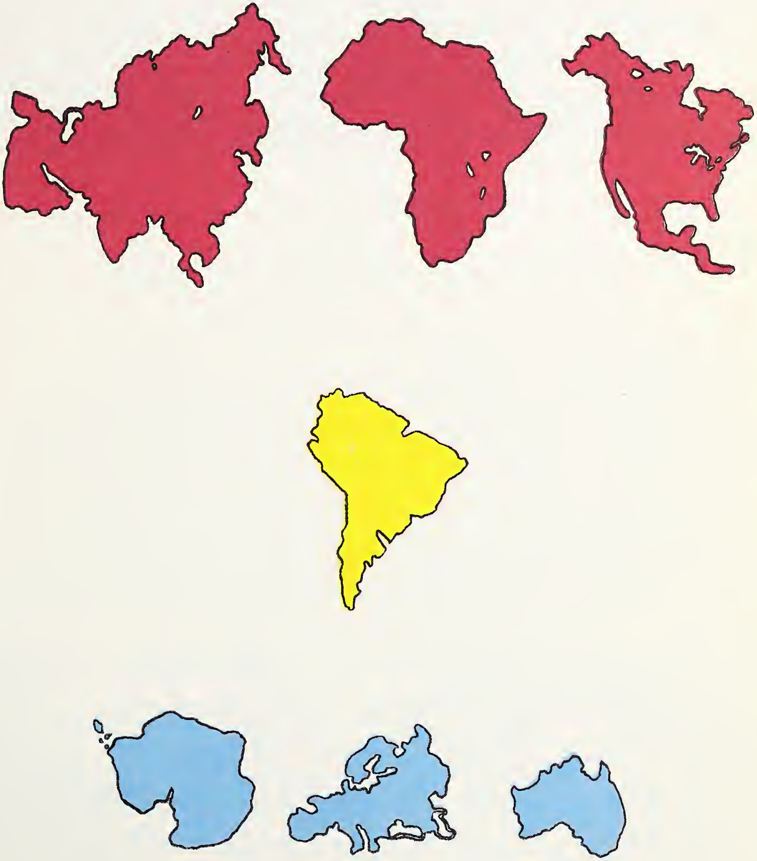
Now perhaps you will have some idea how hard it is to make a true map of the world. If a map covers only a

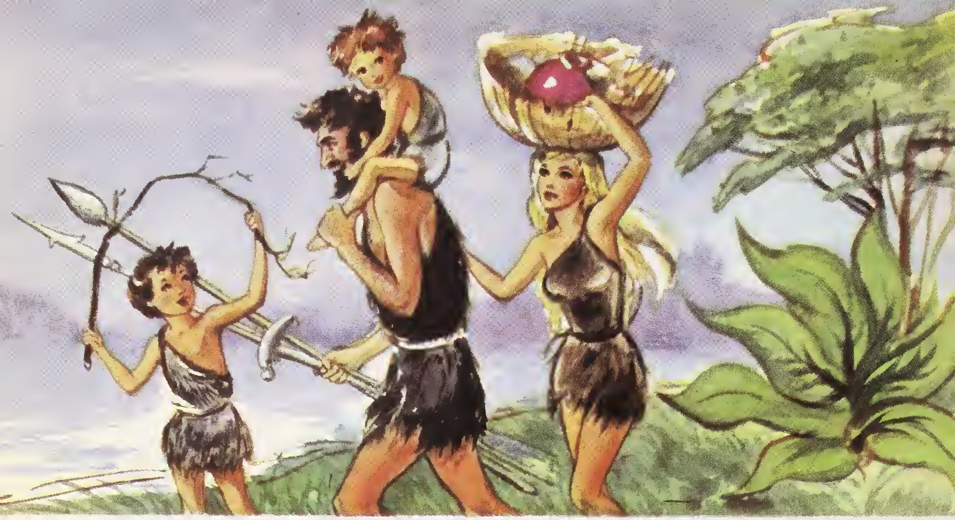
A true flat map.



very small part of the earth, the change is very small. It is not important. Captain Angus' map of Southport is a good one. Your father's road map is very handy. He would not be without it in strange country.

The seven Continents are shown here in order of their size. Can you name them?





PART III

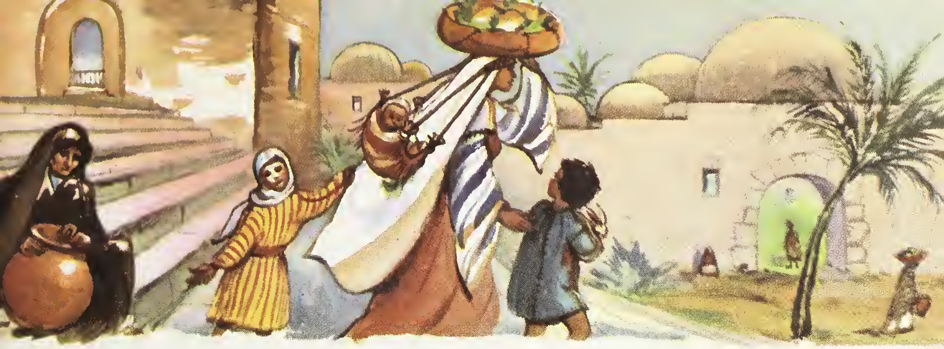
TRAVEL AND TRANSPORTATION

Man First Goes on Foot

Captain Angus and the children travelled from one place to another in different ways. Thousands of years ago there was only one way. People had to go on foot. They marched across great plains. They hurried through dark forests. When danger was near they could hide or run. Bare feet carried men everywhere and travel was slow and tiring.

Man Carries Loads

People have always wanted to move things from place to place. At first they transported their own loads. One of the first loads was a baby or a small child. Men also carried food, tools, and weapons.

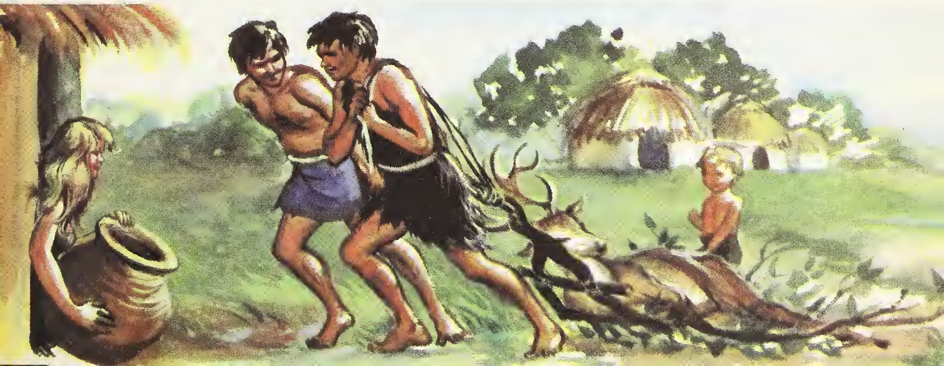


Even now, in many places, people carry heavy loads. Some pile great weights on their heads and others carry them on their backs. Small things were first carried in skin bags. To-day they are carried in baskets or packs. These are sometimes held up by a strap across the forehead. When a man is used to this he can carry very heavy burdens.

Man Finds Other Ways of Moving Loads

Some loads were too heavy to carry, and at first men dragged them. One day a clever man tied a long, strong vine to the load. By doing this more than one person could help to pull it.

Often a hunter killed a heavy animal. He dragged it home along the ground, but this wore away the skin. So



the animal was put on a branch or log and the load was not spoiled when it was dragged.

This was an improvement. Next, the branches or logs were made into sledges or skids. When the ground was not smooth they were hard to pull. Then the load was tied to a long pole. Two men could now carry a heavy burden over rough ground. Seats were later fastened to the poles and people could ride about on strong shoulders. In parts of Asia these "litters" are still used.

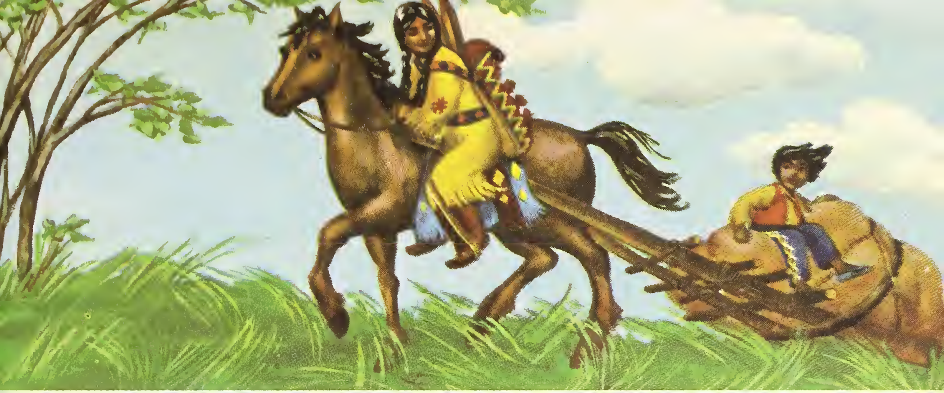
In early times man had no beast of burden but himself. His arms and back were always busy. It is no wonder that his muscles ached and he was always tired!

Man Uses Beasts of Burden

Thousands of years ago man learned to tame animals. When this happened he was able to save his own back. He put his loads on the backs of his four-footed friends! The ox, the horse, and the donkey became man's helpers. In hot countries the camel and the elephant were used. In colder lands the reindeer and the dog were made beasts of burden.

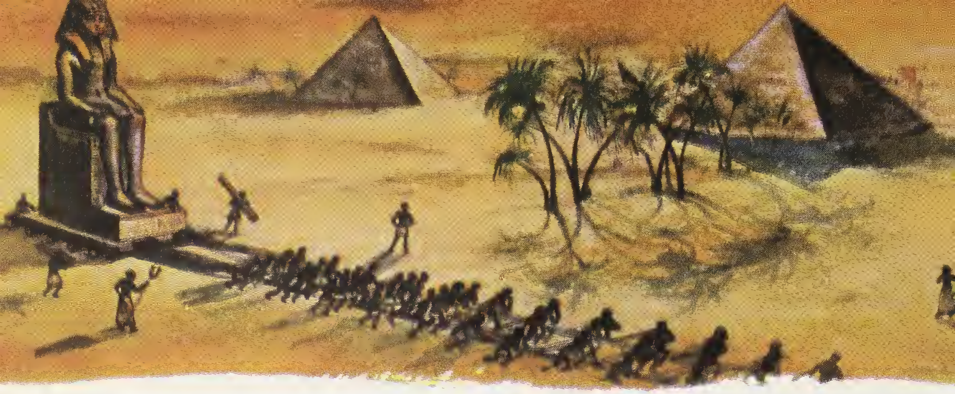
Men soon found out how to carry heavier loads on animals. They tied great packs to their backs. Often there were two bundles or baskets, one on each side. The patient beast learned to carry a heavy burden—and often his master too!

If men could drag loads, so could animals. As time went by they were harnessed to drags and skids. In cold countries dogs learned to pull sledges and to this very day they



still do this work. Heavier loads can be moved over snow and ice because the sled runners slide more easily there than they do over rough ground.

To-day in almost every part of the world men still use beasts of burden. Animals do their work well and they are often more than helpers. The cowboy's horse is his faithful friend. The trapper's dog may be his close companion. Man is always finding better and easier ways to do his work. But it will be a long time before he can do without strong and patient animals.



Here Egyptian slaves are moving a heavy load on rollers.

Man Finds the Log Roller

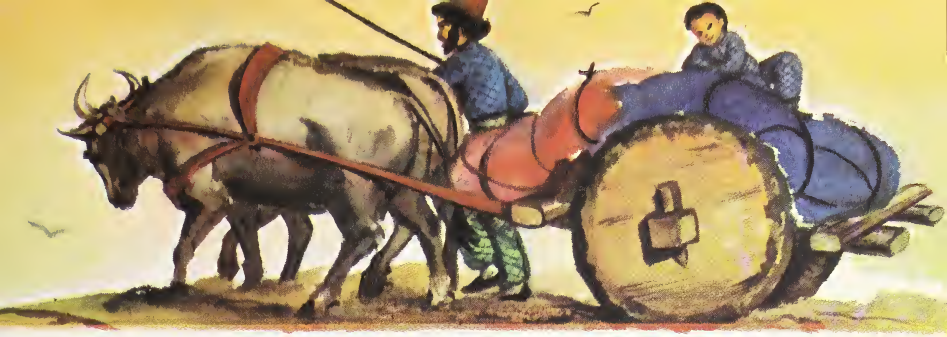
We are not sure how long men were content to drag all their loads. But perhaps, one day, a tired worker ran over a log with his sledge. The log rolled along the ground under the load. The sledge moved forward much more smoothly. The man's work was much easier. The discovery of the roller was the beginning of great things!

For a long time men used rollers. Some of the work they did with them is hard to believe to-day. Very heavy stones were rolled by hundreds of sweating slaves. Some of the great palaces and monuments they helped to build can still be seen in Egypt.

Man Makes the First Wheel

Rollers were a great help, but they were long and heavy. Why could not part of the log be used? Thousands of years ago some unknown man found an answer.

Two slices were cut from a log. Holes were made through the centres. Then a pole was placed through the holes and fastened. The round slices were put under a



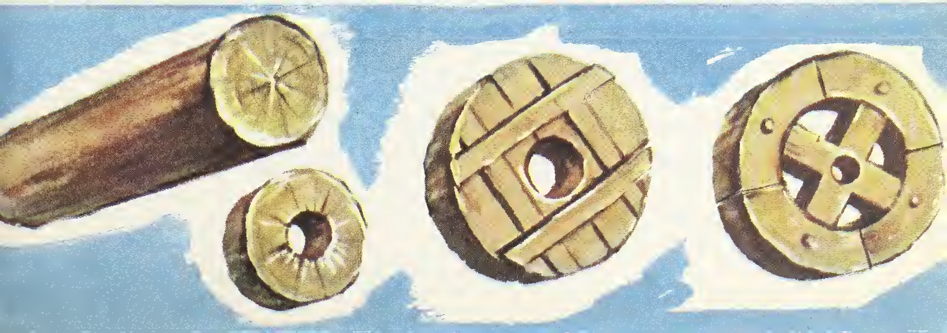
An early cart with wooden wheels.

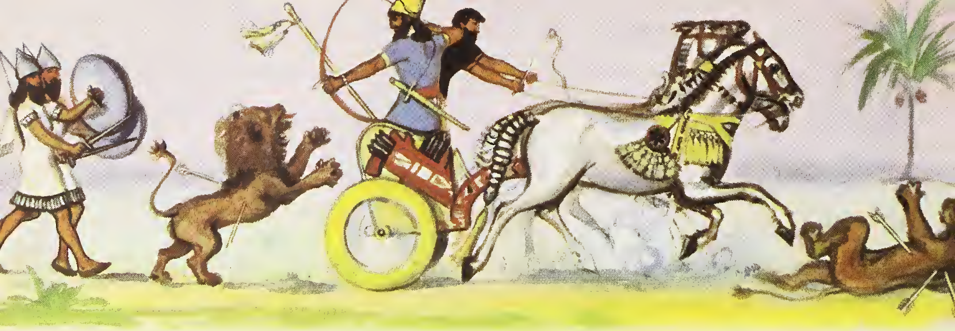
sledge. Here they were tied to stop them from moving along like a roller. Man had found the wheel! His sledge now became a two-wheeled machine. His willing animals soon learned to pull the new vehicle.

The pole between the wheels was called an axle. At first the wheels and the axle turned together. Later the axle was tied to the floor of the cart and only the wheels turned. Men found that slices of log were weak and soon broke down. Stronger wheels were made of boards which were fastened together and cut in a round shape.

The first wheels were solid and heavy. To make them lighter more and more wood was trimmed away. The outside edge of the wooden circle became the rim. It was held in place by spokes. These were lighter wooden pieces from the rim to the centre, or hub.

From log to wheel.





Here the chariot is used for hunting.

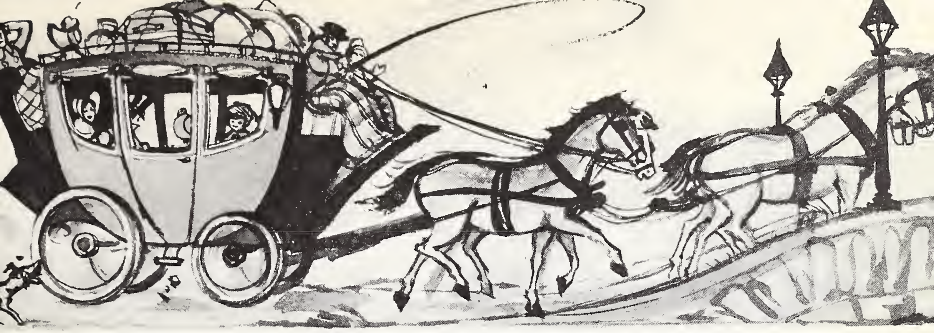
The discovery of the wheel was one of the greatest things man has ever done. With these rolling circles he has made magic ever since!

How Man Put the Wheel to Work

From the two-wheeled cart came the chariot. For thousands of years this vehicle was used for hunting, racing, and fighting. Horses pulled them at great speed. Usually they carried one or two riders. War chariots carried soldiers to battle quickly. The driver could fight as he sped along and use his weapons over the low sides. The high front covered him, and the back was low to let the riders get in and out easily. Racing chariots were pulled by as many as four horses.

Carts and Wagons

For a long time two-wheeled carts carried men and their loads. Heavy weights and rough roads soon wore out the wooden wheels. Tires of leather and then of iron were made to protect the rims. Two wheels were added to the cart. Four wheeled wagons were able to carry greater loads. The sides of the cart were made higher and higher. For ages horses and oxen strained against the harness as



A stage coach.

creaking wheels turned slowly behind them. Changes in wagon-making were made very slowly.

Coaches

You will remember that for thousands of years most men walked. Those who could afford to, rode on animals. Then wagons were built to carry people. They were called coaches. At first they were for the very rich only, but later they were used a great deal by women and children. Men thought coaching would make them weak! So, for a long time they travelled on horseback.

The first coach bodies were placed on the axles and even the best coaches were very uncomfortable. Later, springs of leather, and then metal, gave passengers a smoother ride. Early travellers sat on the hard floor boards, but later coaches had wooden benches. Wealthy people sat on seats made soft with cushions. More and more people had their own coaches or carriages. In Canada, for example, the light four-wheeled buggy became common.

Some coaches began to carry passengers as a business. Any person who paid the driver could ride. These stage coaches followed certain stages or routes. They travelled at regular times, but often they were late because of the very poor roads.

Early Roads

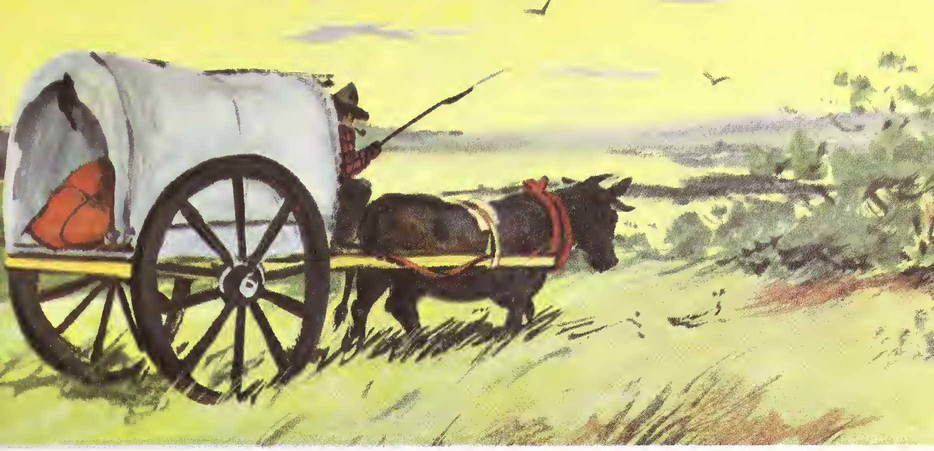
In the beginning there were no roads. The first travellers carefully picked out the best way to go. Narrow trails twisted and turned among the trees and rocks. When carts began to be used the trails were made wider. Trees were cut down, rocks were rolled to one side and then the roads were made straighter. Long ago the Romans made wide, smooth, hard roads. Some of them are in use to-day.

In Canada the first roads were Indian trails. The first white men used them for many years. In time wagons and coaches bumped over rough roads cut through the forests. In wet weather they were often stuck in the deep mud. Then the passengers got out to help the straining horses.

Sometimes logs were laid side by side across the road. They covered the mud, but these "corduroy" roads remained bumpy. In many places gravel was spread on the highway. In time it packed down into a hard surface. In all parts of Canada many roads are still improved with gravel or crushed stone.

Some Early Vehicles

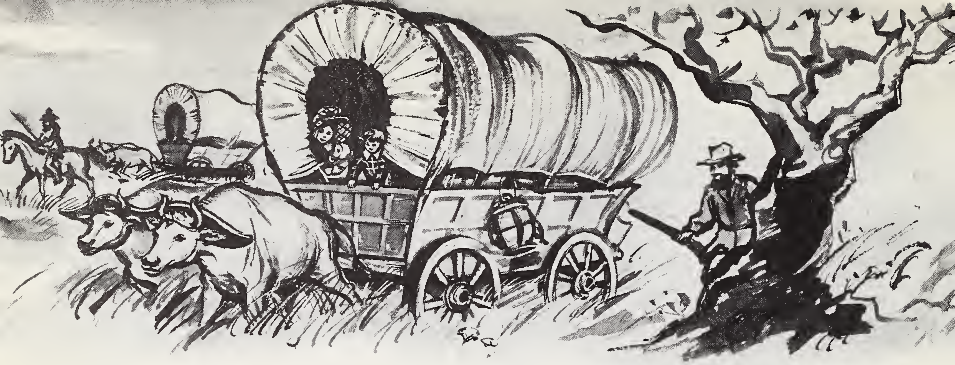
Wheels have been used in many different ways. Vehicles of many kinds have been made. Some are important because better vehicles were made from them. Others are interesting because they were just right for the work they had to do.



The Red River Cart was used by the first settlers in Manitoba.

In Canada, many years ago, there were many ox carts. The oxen wore great wooden collars called yokes to which the harness was fastened. A few Canadian farmers still use oxen in their work. In the early days of Western Canada many settlers used Red River carts. Oxen pulled heavy loads in these awkward wooden vehicles. Their two creaking wheels could be heard for miles on a quiet evening. When the wheels were taken off they were sometimes used as boats!

Another common two-wheeled vehicle is the bicycle. Its wheels are placed one behind the other. At first it had no pedals. The rider pushed himself along with his feet. Later, pedals were put on the large front wheel. The back wheel was very small. The rider pedalled along high above the ground. Another kind of bicycle was the "bone-shaker." It jolted its rider on wooden wheels and heavy iron tires. To-day we have the safety bicycle which is light and easy to ride. In many countries the bicycle is a very popular vehicle.



Have you ever seen a "covered wagon" in a western movie? This big, strong, four-wheeled cart had a canvas top. In it a whole family and all its goods often travelled great distances. It was very common in the early days of Canada and the United States. The "prairie schooner" carried many settlers to their new homes across the western plains. Faithful oxen or horses pulled it through many dangers.

The Machine Pulls Loads—At Last!

For a long time loads were moved by the power of human and animal muscles. Man dreamed of an easier way of transportation. About two hundred years ago he found it by using—water! This is how it happened.

Men had tried other kinds of power. They had even put sails on wagons, but this was not a success.

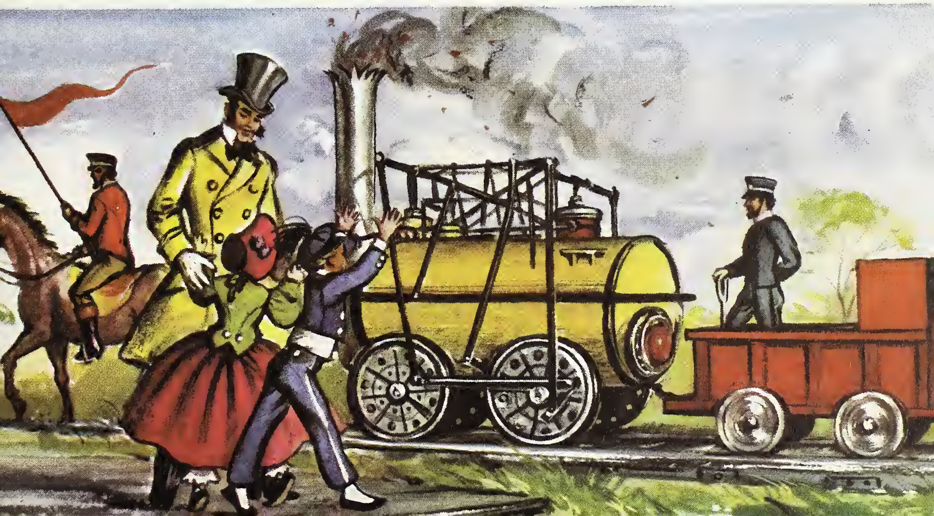
At last steam power was discovered. Men found that a great force was made when water boiled. In Scotland, James Watt watched steam lift the lid of a kettle. He made a steam engine which was used to pump water.

The Iron Horse

It was not long before men began to put steam engines on wheels. These were the earliest locomotives. One of the first to travel on rails pulled five carloads of coal.

George Stephenson, an Englishman, was a great locomotive builder. When steam was let off from an early engine, it made a great roar. People and animals were frightened, so Stephenson turned the steam into the tall smokestack where it escaped more quietly. This change made the fire under the boiler burn much better. It was now easier to get steam up quickly. Stephenson's locomotive, 'The Rocket', had more power than any other at that time.

At first people were afraid of the "Iron Horse." They were afraid of the noise. They were afraid the boiler might blow up. Farmers did not like the clouds of black smoke and the sparks. A man on a horse, waving a flag, went ahead of the locomotive—to give warning!



The First Railroad

Over a hundred years ago Stephenson built the first railway from Stockton to Darlington, in England. At first there was some talk of having horses pull the cars. One of Stephenson's locomotives pulled thirty-four wagons loaded with people, coal, and flour! The four-footed horse was no match for its iron brother!

From that day railroads became steadily better. Locomotives were made larger and faster. The power of horses and of wind was forgotten. The steam engine had come to stay

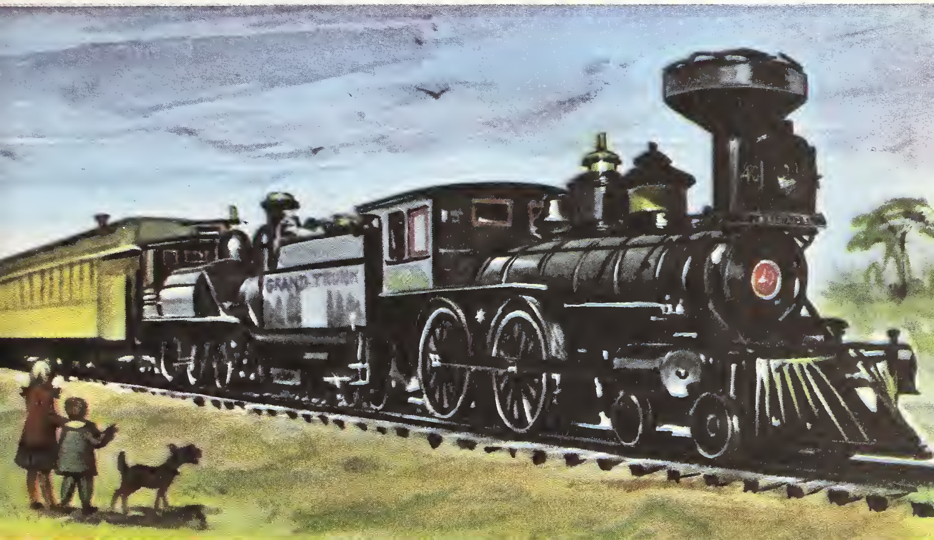
It is interesting to know that tracks came long before trains. Wooden rails were used thousands of years ago. Before the birth of Christ, cart and chariot wheels rolled over them in Egypt, Greece, and Rome. Much later, in England, horses pulled coal carts from the mines. Heavy planks were laid to make a smooth road-bed for the wheels. Wooden rails wore out quickly and soon iron strips were nailed to the planks. In time these strips were made higher and the trains ran *on top* of the rails. Special wheels had an edge, or flange, which kept them from rolling off. From that time trains could no longer run on the roads. The difference between railway vehicles and those of the highway became greater and greater.

Railways were built through all kinds of country and, of course, all railway tracks were not straight. There were many sharp curves. The first trains often jumped off the tracks, because the wheels could not change direction easily. To improve this, smaller wheels were placed on little trucks. Each truck was fastened under the locomotive or car by a bolt at the centre. Then trains could easily follow a curving track. Train and railway car wheels are attached in this way to-day.

In the first locomotives the engine was connected to one driving wheel. When this wheel went around, the locomotive moved. Later engines were built with two or more driving wheels on each side. They were joined by long rods. In this way power from the engine made all the driving wheels turn. As locomotives became heavier they gripped the tracks more firmly. The strings of cars behind the powerful locomotives became longer and longer.

Early 'Iron Horses' had names, but to-day they have numbers. At first they were decorated with shining brass and bright paint. The first railway carriages were like stage coaches on tracks. They were even brighter than the

One of Canada's early trains.



engines which pulled them. Farm animals soon became used to the puffing monsters. Cattle searched for tender grass in the middle of the track. "We were here first," they seemed to say. Often they would not move an inch! Cowcatchers were put in front of locomotives. With these the first engineers gently pushed the stubborn animals from the rails.

The first rails were fastened to long blocks of stone. Later they were spiked to wooden cross-pieces called "ties." A railway spike has a flat hook-like head. It overlaps the bottom of the rail and holds it firmly in place.

In the early days trains could not run at night. Then railroad men built a fire on a flat car in front of the locomotive. Its light shone on the track ahead. Later, oil lamps were used. To-day a great electric light helps the engineer to see far ahead, and now trains travel through the night at top speed.

RAILWAYS IN CANADA

The 'Iron Horse' was soon puffing in Canada. Over a hundred years ago a short railway of fifteen miles was built near Montreal. The locomotive was called the 'Kitten.' At first it refused to go and horses took its place. The trouble was soon found. All the 'Kitten' needed was a good meal of wood and water! The first trip took an hour. The Champlain and St. Lawrence Railway was the first of many railroads in our country.

Building long lines of track in Canada was not easy. Our land is very large. Many parts of it are rough and rocky.

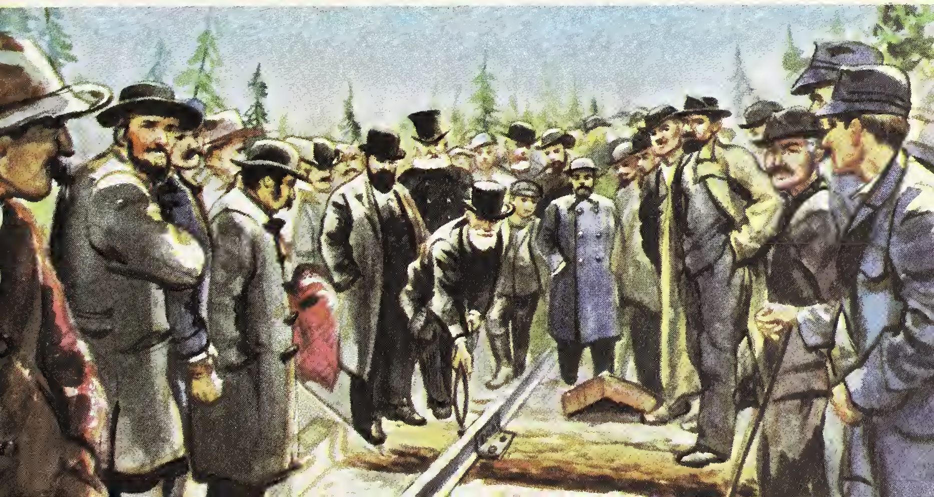
Others are swampy. There are great lakes, deep valleys, and rushing rivers. There are high mountains and wide plains, but before long there were many short railways in the eastern part of the country.

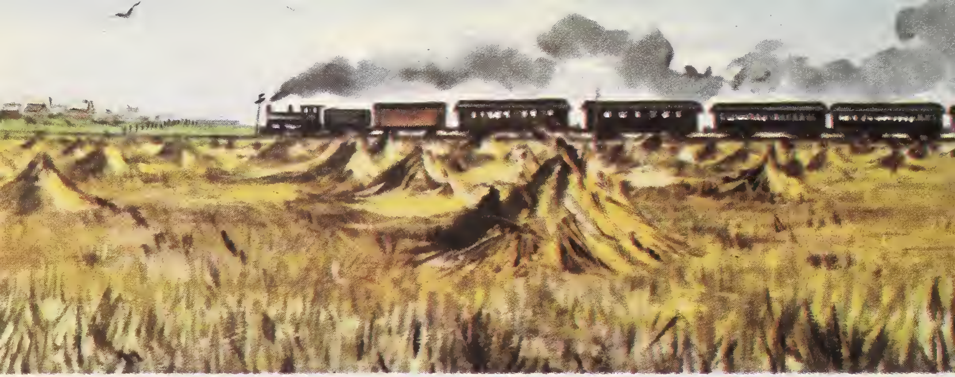
About a hundred years ago the Grand Trunk Railway was finished. The western end was at Sarnia on Lake Huron, in Ontario. The eastern end stretched almost to the mouth of the St. Lawrence River, in Quebec.

In those days the way to western Canada was very difficult. It was a long trip by boat, canoe, and wagon. Our country was very young and the provinces seemed to be spread far apart. Some people thought a railway would help to join the East and West.

"Build a railway across Canada? It can't be done!" So said many Canadians. It would have to go through wild, unknown country. It would have to cross wide rivers and pass among snow-capped mountains. But there were men who said, "We can do it."

Driving the last spike of the Canadian Pacific Railway.





One of the first trains to cross the Canadian Prairies.

The hard, back-breaking work began. In many parts it cost half a million dollars to build *one* mile of track. Four and a half years later the Canadian Pacific Railway was completed. A thin line of steel now crossed Canada. This railway *did* join the East and the West. It helped our country to get a good start in its early days.

Later the Grand Trunk and other railways were joined together in one great system. It was called the Canadian National Railways. To-day it is the largest railway system in North America. It is owned by the people of Canada.

Railways To-day

Over one hundred years ago little "puffers" rattled along at fifteen miles an hour. To-day great passenger trains roar over the rails at more than one hundred miles per hour.

For every kind of work a different locomotive has been built. For passenger trains the locomotive has great speed. For long, heavy freight trains it is very powerful. For moving cars in the freight yards there is the fussy little switching locomotive.

In the early days of the railroad, the 'Iron Horse' burned

C.N.R. Photo.

A modern Canadian passenger train.

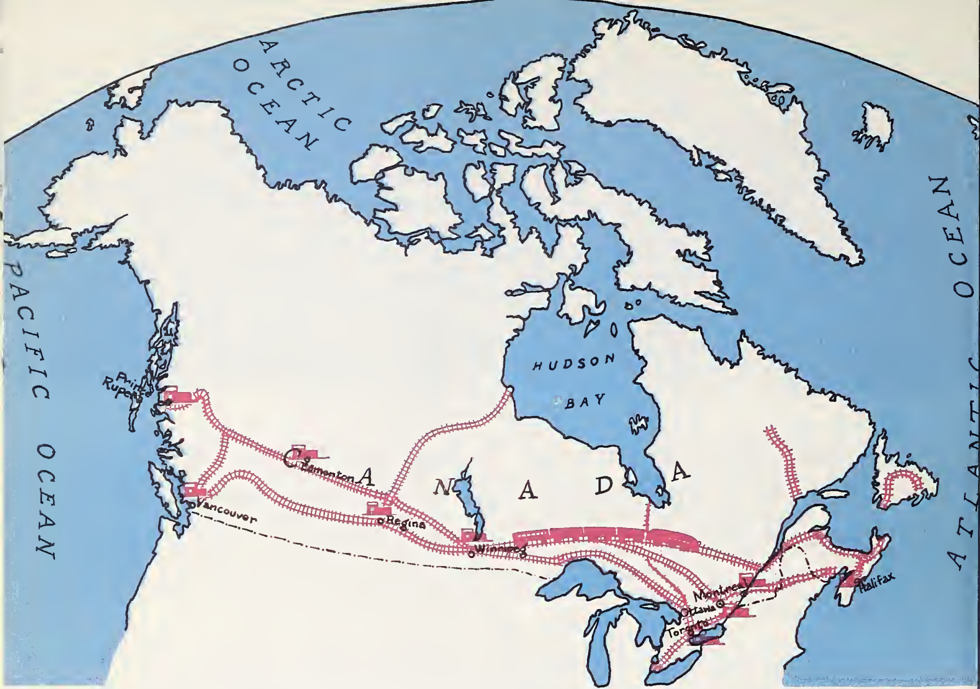
wood. Then coal was used. To-day many locomotives burn oil. In these great "diesels" the burning oil makes electric power to drive the wheels. Electric locomotives are quiet and make no smoke. They are used in or near cities and towns.

Many modern trains are "streamlined." Their shape helps them to cut through the air. They are made of steel or light, shiny aluminum.

To-day many passenger trains are homes on wheels. David had a most enjoyable train journey to British Columbia. He ate delicious meals in the dining car. He slept on a soft bed, or berth, which was made up in the

A modern Canadian freight train.

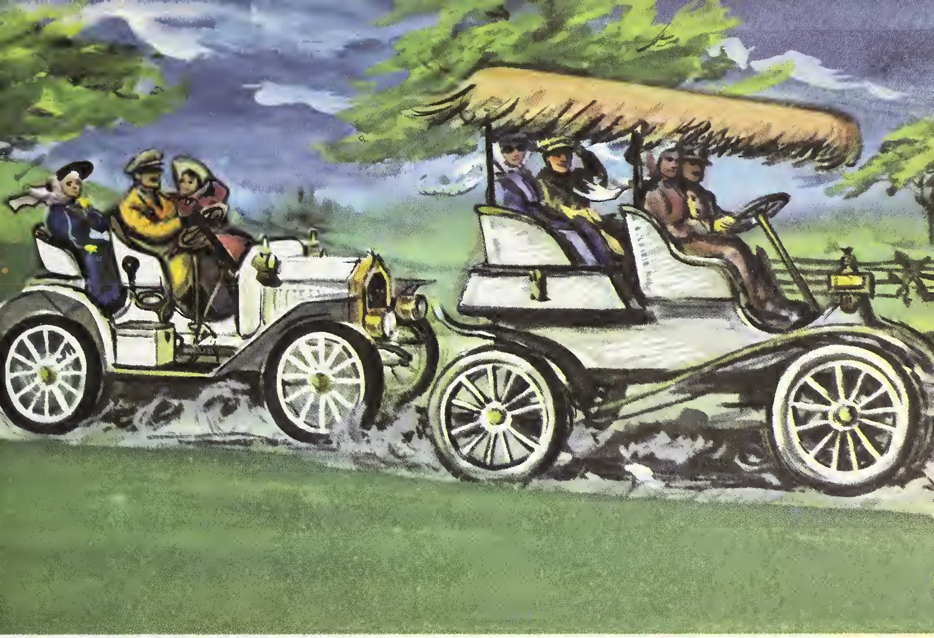
CANADIAN PACIFIC
4028
4029
CANADIAN PACIFIC
C.P.R. Photo.


ARCTIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
HUDSON BAY
CANADA
Prin Rupe
Edmonton
Vancouver
Regina
Winnipeg
Montreal
Ottawa
Toronto
Halifax

Thousands of miles of railway track cover our country to-day!

sleeping car. He sat in the club car which was furnished like his living room at home. He had a restful seat in the passenger car. He saw the wonderful mountain scenery from a "dome top" car. Even though the weather was warm, he was comfortable in the cool, fresh "air-conditioned" train. If he had travelled in winter he would have found the cars warm and pleasant.

The first railways were short. To-day they cover many parts of our country like a spider web. The railroads tie our great country together. We would find it very difficult to get along without them.



Two of the first cars made in Canada.

THE HORSELESS CARRIAGE

Down the dusty street spluttered a strange, new vehicle. Horses reared up and tried to run away. Boys ran along beside the funny machine. "Get a horse!" someone shouted. But the driver did not heed the jokes of the onlookers. He was far too busy driving his "horseless carriage."

Long before this time men had tried to make a carriage that would go without horses. The first road vehicle to carry passengers was made by an Englishman named Richard Trevithick. His car was moved by a steam engine. Other cars were driven by electricity.

The gasoline engine was invented in Europe. It was simple and cheap, and in time the other kinds of engine were not used. Power from gasoline has made our cars go for many years.

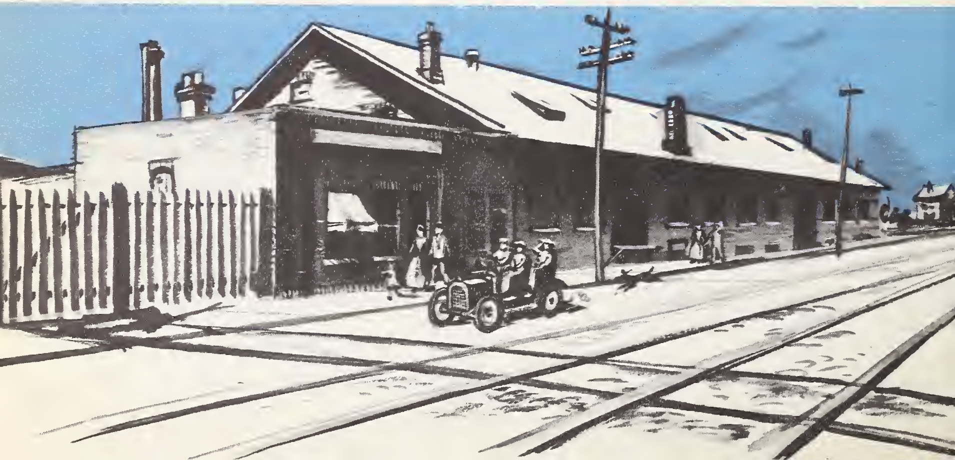
Many people laughed at the first automobiles. They were really carriages with engines instead of horses. The driver started the motor by turning a crank. This was hard and dangerous work. He steered with a long handle. To warn people that he was coming he tooted a noisy horn by pressing a big rubber bulb.

Early car drivers had many troubles. Engines were hard to start and harder to keep running. There were many flat tires and few garages. Each car had a tool box which was used often, but people were happy to have cars. They liked to drive them over the rough roads.

The first automobile riders wore goggles and long coats to keep out the dust. To go for a car ride was an adventure.

At first cars were made by hand. Men worked hard to improve them. In the United States Henry Ford began to make many cars in a factory. Because they were made mostly by machine his automobiles could be put together

One of the first automobile factories in Canada.



One of the newest automobile factories in Canada.

quickly and cheaply. Soon great factories were making cars by the thousands. To-day millions are manufactured each year. They are well built and dependable. Almost every family has a car.

The gasoline engine has changed the way we live. Families can travel almost everywhere. Great trucks carry every kind of goods. Motorcycles roar along the roads. Buses carry many passengers in much greater comfort than in the days of the stage coach. Tractors have taken the place of the horse on many farms. Garages and service stations are found on many street corners. They repair and look after cars of all kinds. In big sales rooms car dealers show shiny new automobiles and trucks. Each year the new models are better than ever.

The making of cars is a great and important business. In Canada it is second only to the pulp and paper industry, about which you will read more later. Over half a million new motor vehicles are made each year. In our country there is a passenger car for every six people. Every Canadian man, woman, and child could travel by car at the same time!

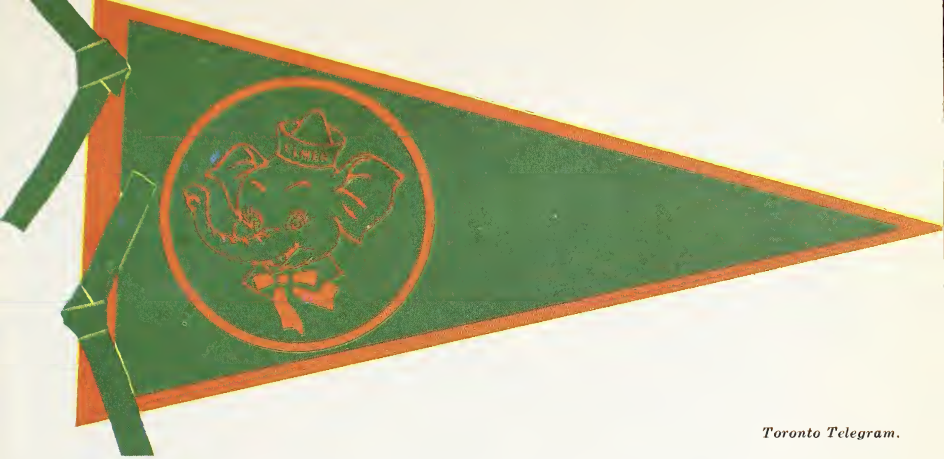
Cars are no longer carriages with an engine. They are closed in to keep out the dust. The steering wheel has taken the place of the long steering handle. No longer does the driver crank his engine by hand. Now he presses a button or turns a key, and the self-starter makes the engine go. Brakes and tires and springs are better. Heaters keep the passengers warm in winter. Wipers keep the windshield clear when it rains. Powerful headlights make it easy to drive at night. Shiny paint and metal make the cars of to-day attractive. Early autos were high and clumsy looking. Now cars are low and streamlined.

When people told the first car owners to "get a horse" they were not always joking. Early engines were weak. The drivers could not be sure that they would go, even on good roads. To-day no one thinks that horses should take the place of the powerful gasoline engine. Do you remember how Captain Angus' sturdy little jeep took him over the roughest ground?

To-day men are finding that a great power comes from the tiny atom. Gasoline engines may soon be things of the past. Perhaps you will drive an atomic car when you grow up!

ROADS TO-DAY

In the days before cars most roads were very poor. Some were improved with gravel. In cities, others were paved with round cobble stones or bricks. Wider and better paved roads are needed, as more and better cars are built. Each year more concrete and asphalt highways are plan-



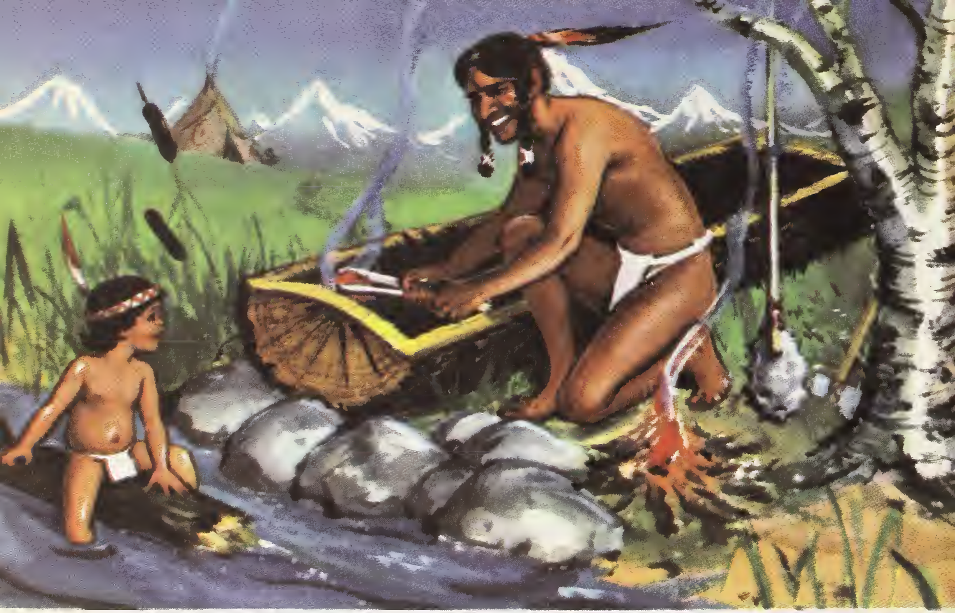
Toronto Telegram.

If your school has an Elmer Pennant, do your best to keep him flying.

ned. Great bridges and tunnels carry roads across wide rivers. Many smooth two-lane highways help cars to go faster and faster.

If all the paved roads in Canada could be placed end to end they would go around the earth eight times at the equator! With so many good roads and fast cars there is great danger. We have many safety laws. Traffic signs and lights warn drivers and pedestrians everywhere. In spite of this more and more people are killed each year on the highways. Girls and boys especially must obey the safety rules.

The green pennant of Elmer the Safety Elephant flies in front of many schools. This means that the pupils have had no accidents. If an accident is the fault of a pupil — Elmer is taken down. If the school goes for thirty days without an accident—Elmer is put up again.



SHIPS

Early men soon found that it was good to live near water. They caught fish and hunted the animals that came to drink. Even in those days a traveller could not go far without crossing water. At first he waded streams at fords, or shallow places. Later he learned to swim. Then he could cross deep water. But he had no way of carrying his loads with him.

The first boat may have been a tree trunk. Men had used logs to drag loads on land. Soon they paddled floating logs with their hands and feet. Several logs were fastened together to make a raft, and long poles were used to push it. Now the early sailor had something on which he could float loads.

The raft was clumsy and heavy. Men learned to hollow a great log with shells and stone tools. To save work they often burned out some of the wood with red-hot coals. In this dugout canoe men carried loads and kept dry at the same time.

If logs could not be found, the ship-builders used whatever they could get. Grass and reeds were tied in bundles or woven into baskets to make boats. Skin or bark canoes had wooden or bone frames. In Canada's early days the best way to travel was by Indian birch-bark canoe.

In many parts of the world these little vessels are still seen. To-day rowboats and canoes are used for work and pleasure. Small boats have changed very little since the days of long ago.

Wind Power

Man soon learned that the wind was strong. If he stood up on his raft the breeze blew against his body. The power of the wind helped him on his way. Perhaps the first sails were animal skins. The first masts may have been long raft poles. Later, sails were made of cloth, and the trunks of whole trees became masts. Early sailors could have sailed Captain Angus' 'Sea-Gull'. But they would have had trouble with the gasoline engine!

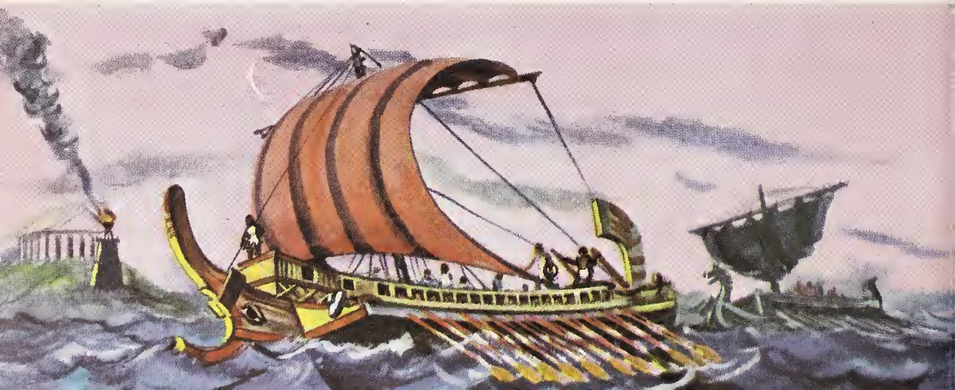
Ships of Long Ago

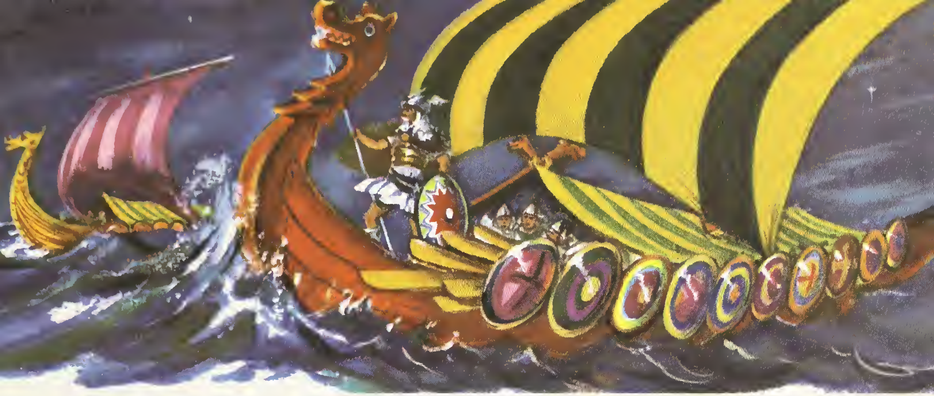
Long before Jesus was born Egypt was a great country. On both banks of the mighty Nile river lived many people. They learned to make bigger and better boats. These ships were moved by many oarsmen. There was also a tall mast which could be taken down and folded up when it was not needed. Egyptians sailed down the Nile to a great sea. After a time they built sea-going ships.

In Asia, on the eastern shore of this sea, lived the Phoenicians (Fon-ish-ans). These people were the greatest traders and sailors of long ago. They sailed across the Mediterranean Sea to Africa and Europe. Soon this "Sea in the Middle of the World" was not large enough for them. Then they sailed fearlessly into the broad Atlantic. They traded along the coast of Europe. Their captains knew Britain well. They may even have sailed around Africa. For the first time sailors learned to use the sun, moon, and stars for finding directions.

As time went on the Phoenicians were followed by the Greeks and Romans. The ships of their countries were called galleys. They were long, with high bows and sterns. Slaves pulled the heavy oars which were in two or three rows, or banks. The tired oarsmen were thankful when the wind filled the great coloured sail. Galleys were steered by a long oar at the stern.

Greek galleys.

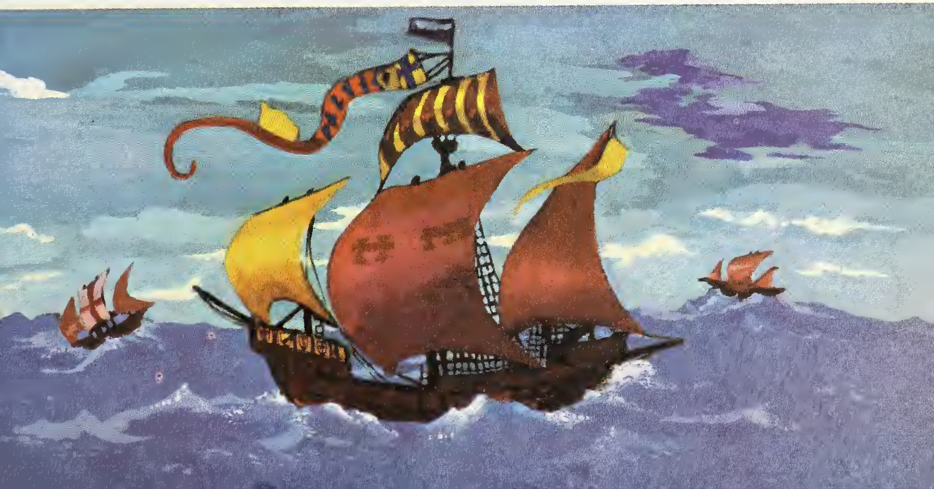




In Northern Europe lived the Vikings. They were fierce pirates who raided far and wide. Their long, low ships were powered by a single bank of oars. There was also a single, great sail. The Vikings were afraid of nothing. One of them, named Leif, sailed across the Atlantic Ocean to North America. The Vikings sang songs which told of amazing adventures!

Hundreds of years later sailors from Europe again came to North America. The first of these was the Italian, Chris-

A ship of the time of Columbus.

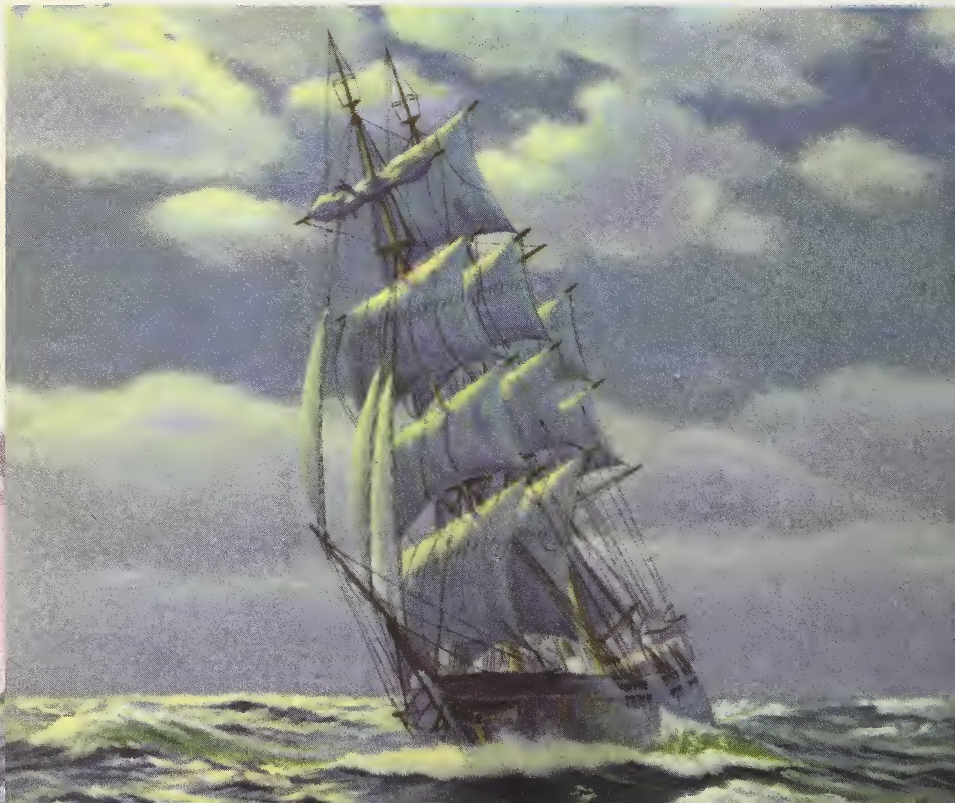


topher Columbus. By this time ships had two or three masts and several sails. They were high above the water and had decks at different levels. The great steering oar was fastened to the stern. It was called a rudder.

Many people from Europe came to live in North and South America. The Spaniards found gold and silver in their new lands. Larger and faster ships were built to carry the rich cargoes to Spain.

There have been pirates almost as long as there have been sailors. They robbed the Spanish treasure ships.

A swift, three-mast sailing ship.



Cannons were used for protection. Ships were built high above the water so that more guns could be put aboard. They were the battleships of long ago.

Later, fast sailing ships began to carry packets of mail and other cargo. "Packets" made regular trips across the ocean. These stagecoaches of the sea became the first ocean liners.

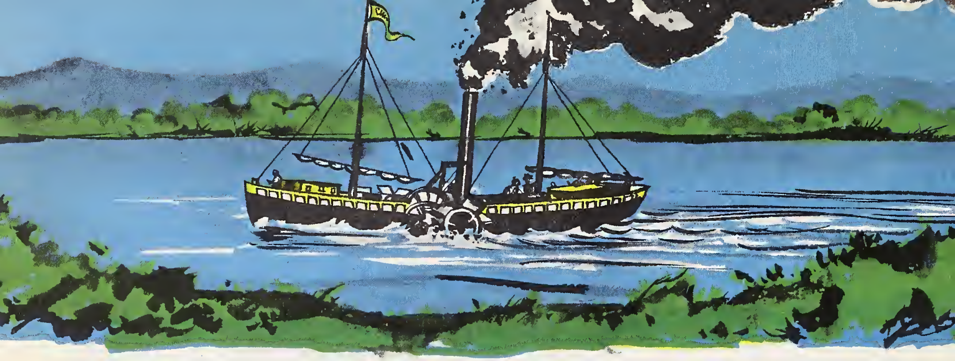
In time, food, tea, and other goods were brought to North America from far-off lands. On long, slow voyages the cargo often spoiled. Greater speed was needed. The ships became lower and beautiful. Great masts carried clouds of white, billowing sails. The "tea clippers" became the speed demons of the sea.

The Steam Engine Goes to Sea

For thousands of years sails carried men across the seas. During that long time sailors learned many secrets of the wind. In the beginning ships sailed only where the wind blew them. Little by little seamen learned more about setting their sails and about steering. At last they found out how to sail in almost every direction—no matter how the wind blew.

Usually the wind was a helpful servant. But sometimes it was a terrible master and great storms dashed ships to pieces. At other times there was no wind. In a dead calm ships could not move for days. What was needed was a ship that could sail on through storm or calm.

About this time the steam engine was invented. Men tried to put the new machine into boats. In Scotland a



An early side wheel steam boat.

steamboat pulled vessels through a canal. Several years later an American, Robert Fulton, built a paddlewheel steamer. People smiled at the idea. How could a ship go without oars or sails? But Fulton showed them that it could be done when his 'Clermont' puffed slowly up the Hudson River.

Canada's first steamer was built at Montreal. The "Accommodation" steamed to Quebec City at four miles an hour. Sometimes the current in the St. Lawrence River was too strong. Then teams of oxen towed her along.

From this beginning came the great ships of to-day.

Early steamers burned wood to make steam. On long voyages they sometimes ran out of fuel. If the engines broke down sails were used. Soon ships were built of iron, and then of steel.

"Why doesn't a steel ship sink? Isn't steel heavier than water?" These are good questions.

A log raft is lighter than water. That is why it floats. Remember that if a thing is lighter than water it will float upon it. It is true that a ship of solid steel would sink quickly. But a modern vessel is built of a thin shell of steel. The inside part is hollow and full of air. It is much lighter than it would be if it were filled with water. Even with a heavy cargo it is still light enough to float.

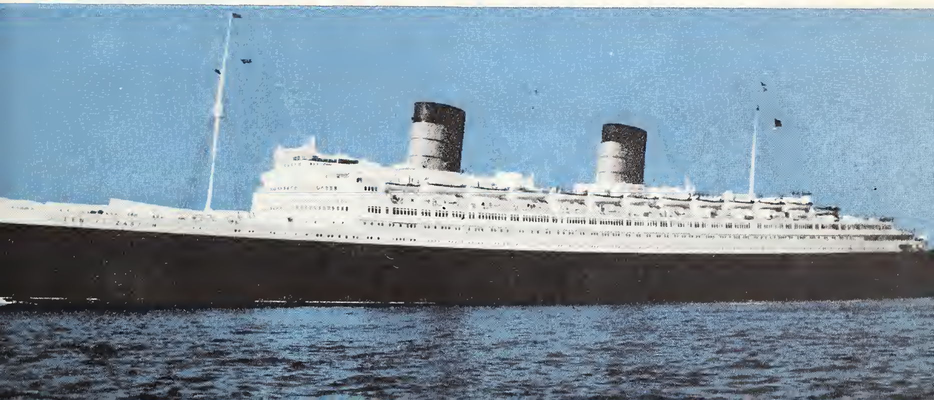
As ships became larger, paddlewheels disappeared. Screw propellers took their place. They have great metal blades like those in an electric fan. The propeller pushes the ship as it turns under water at the stern. Almost all ships are driven in this way to-day.

Ocean liners are the monsters of the sea. These floating towns can carry thousands of passengers across the Atlantic Ocean in fewer than five days. Their great engines use coal or oil as fuel.

To-day ships are built in many shapes and sizes. There is a vessel for every job. To protect our country there are battleships with great guns and thick steel armour.

The Queen Elizabeth, a modern British passenger ship.

Cunard



CANADA STEAMSHIP LINES

Canada Steamship Lin

The biggest freight boat on the Great Lakes.

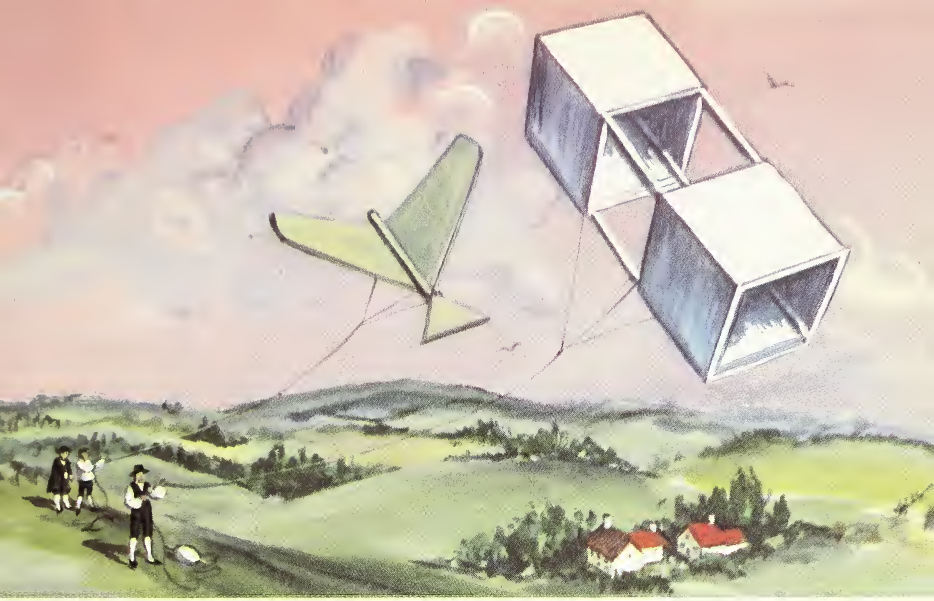
Freighters carry huge cargoes of every kind. Ferries make short trips with passengers, automobiles, and sometimes railway cars. Barges are towed behind powerful tugs. These little vessels also tug and push great liners in harbour when the big ships have too little room to sail themselves. On lake and river there are rowboats, sailboats, canoes, and motor boats for pleasure.

Men have not been satisfied to travel *on* the water. Now there are amazing ships which sail below its surface. These ships, called submarines, have been used mostly for war. Some under-water vessels are now being driven by the power of the tiny atom. Perhaps atomic power will soon be driving all ships. Then to-day's vessels will be almost as old-fashioned as the caveman paddling on a log!

Man Takes to the Air

For thousands of years people travelled on land and water. But they were not able to take to the air.

"If birds can fly—so can I," said many men. For over two thousand years they worked to make their dream of flying come true.

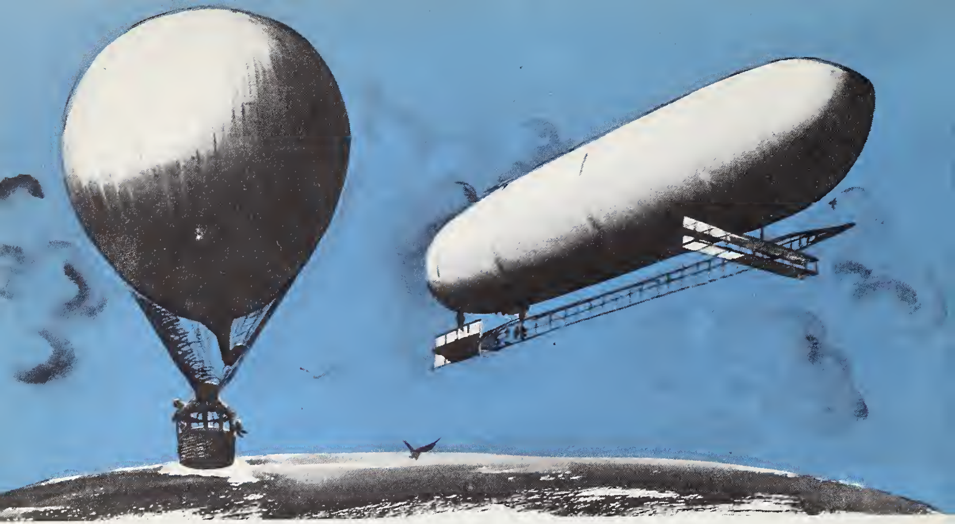


Men tried to fly with kites of every kind. They tied wings to their arms and legs. But no matter what they did, they could not fly.

At last they used balloons. In France the Montgolfier brothers made a large bag of silk. They filled it with hot air. The balloon rose from the ground because hot air is lighter than cold air. A chicken, a sheep, and a duck made the first flight. In a short time men learned to fly very well in balloons.

Many years later engines were used to push balloons through the air. Rudders turned the airship to left or right. Flaps called elevators made it go up or down. Airships which men can control and steer are called dirigibles.

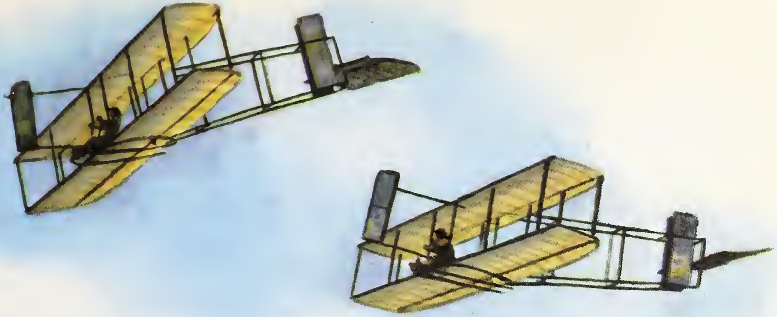
A German named Von Zeppelin became a famous maker of dirigibles. His “zeppelin” was a large cigar-shaped



An early balloon and dirigible.

balloon with a light frame inside. Zeppelin filled his airships with a very light gas called hydrogen. This made them lighter than air and they floated easily. Fastened to the frame were gasoline engines. They turned the propellers which pushed the airship. Underneath also were cabins for the crew and passengers. Zeppelins have made many long flights and one has flown around the world. Dirigibles are hard to handle. Many have crashed and burned. "Lighter-than-air" ships are not often used to-day.

Have you ever seen a bird glide through the air with its wings spread? Long ago men watched them and began to try to glide also. Gliders were invented and men learned to fly them. These flying machines are not like balloons. They are heavier than the air and do not float in it. Their wings are made in a very clever way. As they glide, currents of air flow past the wings. This keeps the glider up as the wind carries it along.

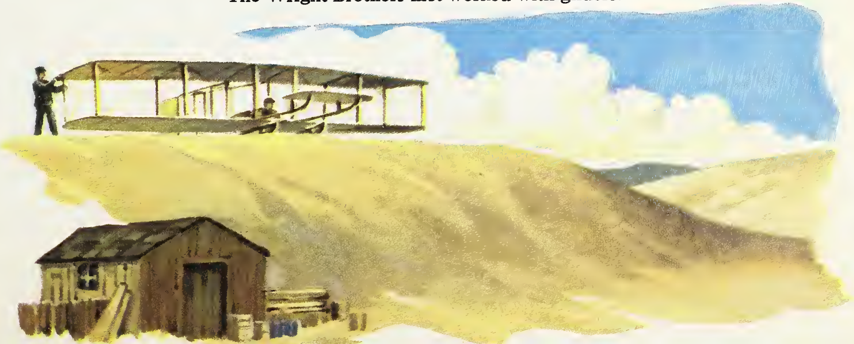


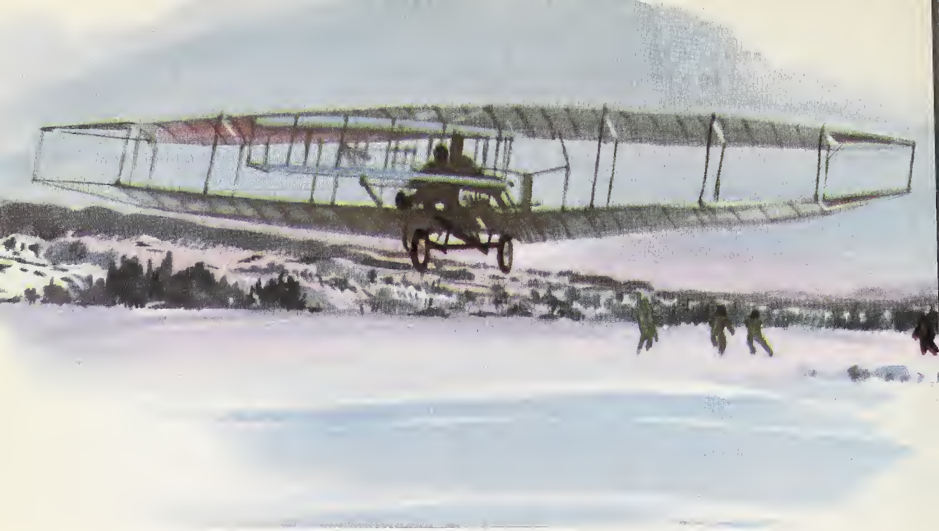
Two of the first gliders.

Glider men knew that gasoline engines were being used to push carriages. Why could they not use them to push gliders? But it was not as easy as it sounded and many men failed. Again people laughed at the dreamers. "FLY?" they said, "How foolish!"

In the United States lived the Wright brothers, Orville and Wilbur. They knew what it was like to be laughed at. But it did not stop them from working night and day for a long time. They built an engine for their glider. Over fifty years ago, and after many trials, success came to them! Orville made the first "heavier-than-air" flight. The two propellers on their airplane pushed it about forty yards through the air! This was a beginning. Many people who had made fun now stopped laughing. Perhaps the Wrights were right!

The Wright Brothers first worked with gliders.



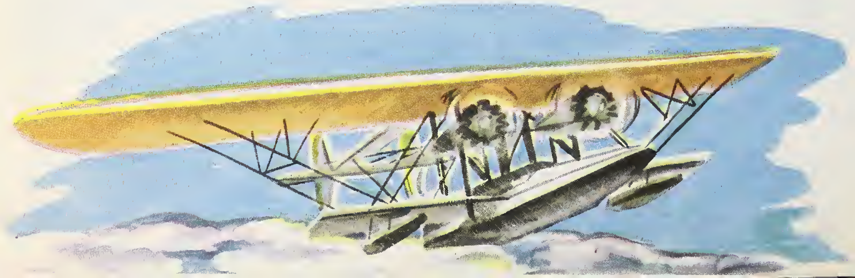


The Silver Dart takes off from a frozen lake.

The first Canadian airplane flew in Nova Scotia. A few years after the Wrights, 'The Silver Dart' took off for the first time. The pilot was a Toronto engineer named McCurdy. One of the men who helped him was Alexander Graham Bell. You will read more about him in the next Part. McCurdy and his friends improved their plane quickly. By the end of the summer it made a flight of nine miles!

Every year better airplanes were built. Flights became longer and longer. Soon aircraft were transporting passengers much more quickly than trains or cars. They also carried mail and freight to all parts of the world.

A sea-plane.

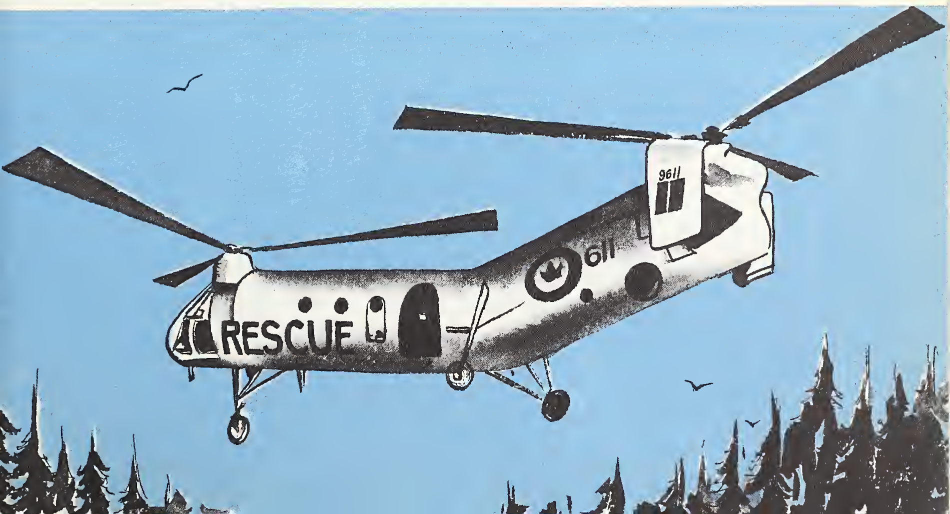


There are many kinds of aircraft. Airplanes which run on wheels as they take off are land planes. Planes which take off from water are sea-planes. Some which have two wings are called biplanes. Those with one are monoplanes. You will notice that most of to-day's planes are monoplanes.

The Flying Windmill

Perhaps the most wonderful heavier-than-air craft is the helicopter. It is like an ordinary airplane with no wings. Instead of a front propeller there is a large one, and sometimes two, above the fuselage or body. The "Flying Windmill" can fly at a good speed. The most unusual thing about it is that it can stay in one place in the air. It can move up or down, backward or forward. Because it can do all these things it does not need a long runway to take off.

An R.C.A.F. helicopter used for rescue work.



This wonderful machine can be used for many things. It can help to save shipwrecked sailors from the stormy sea. It can take loads to many places where ordinary airplanes cannot land. In the days to come the helicopter will become better and better. Many flying men say that "the whirly bird" is the best aircraft of all.

The Jet Airplane

For many years airplanes were pulled or pushed by propellers. Several years ago a new kind of airplane engine was invented. It needs no propellers. There are very few parts that move. It it not easy to understand how this amazing engine drives an airplane. But here is a little experiment which may help you. Blow up a balloon and throw it into the air. What happens? The air inside rushes out through the neck, and the balloon is pushed quickly through the air. This will give you some idea how the jet engine uses its power to make a plane fly. Jet aircraft are very speedy. Some have travelled faster than seven hun-

An R.C.A.F. jet aircraft.

Avro, Canada.

403
CF-TGC
TRANS-CANAD

T.C.A. Photo.

A Trans Canada Airlines passenger plane flies over Toronto.

dred miles an hour. In the days to come better planes will fly even faster.

In a very short time flying has become a part of our everyday life. Not long ago everyone ran to look if an airplane flew over. Now very few turn their heads at the sound of engines in the air.

To-day the continents and oceans are covered by a network of air lines. They are the railroads of the air. Great transport planes fly from city to city at regular times. Air travel is comfortable and very fast. Once it was an amazing thing to fly across oceans. To-day people make the trip every day.

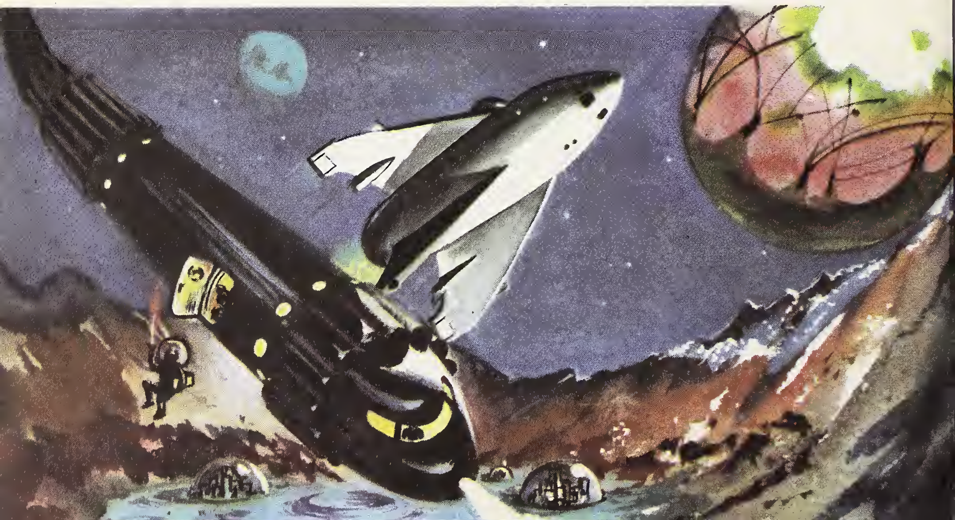
Airplanes have become very large. Some can carry over two hundred passengers and tons of freight and mail. Careful, well-trained pilots fly through all kinds of weather. After they take off from the airport, which is the railroad station of the air, they keep in touch by radio. They learn about the weather ahead. They are told when and how to land at the next airport.

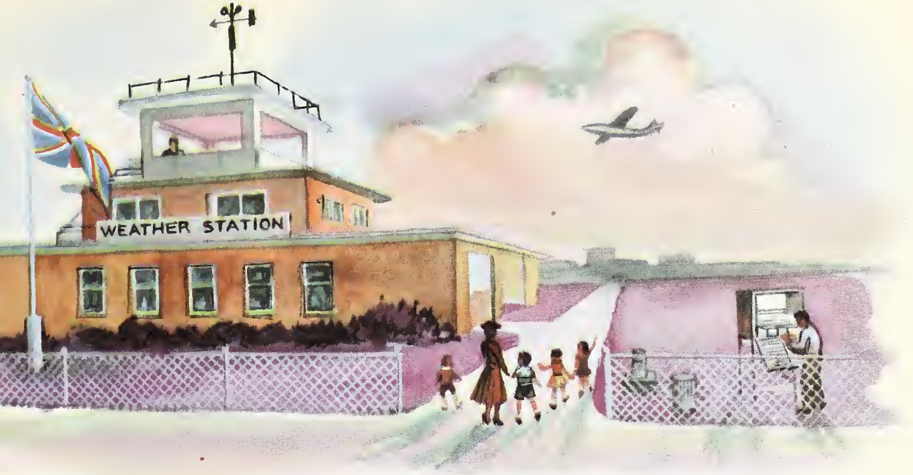
Many wonderful inventions help to make flights safer. In front of the pilot are rows of instruments. They tell him how high and how fast he is flying. One invention can fly the airplane without his help. Another can land the aircraft in a thick fog when the pilot can see nothing. High in the air ice often forms on the wings. With a heavy thickness of ice a plane may crash. Many planes now have "de-icers" which take off this dangerous coating. Sometimes there is trouble in the air. If the airplane cannot land safely the fliers jump with their parachutes. Like big, silk umbrellas they carry the men safely to the ground.

What changes there have been since men first wished to fly like the birds! Wonderful things have been done—and there are many more to come.

Men are now looking beyond the earth. Some are thinking about "rocket" trips to the moon and other worlds. To-day we may smile at these things. But don't forget—people laughed at the Wright brothers!

Rocket ships may some day fly to other worlds.





Weather stations help to make flying safer.

Men have now learned many ways to travel on land, on water, and through the air. They can cross great oceans and mountains. Fog, snow, and storms often make travel dangerous. But clever men have made inventions to overcome these dangers. Brave men have been eager to try new ways of travel. Their work has made the world seem smaller. This is because men can move around it so quickly. In our story you have read about many of the famous pioneers of transportation. But we should never forget all the people who work every day to transport us and our loads.

Girls and boys go to school for a long time to learn many things. Another wonderful and interesting way to learn is by travel. It is more than going from one place to another. It gives people a chance to make friends in their own country—and in all parts of the world.

PART IV

COMMUNICATION

Each one of us has a brain. When we use it to think, we have ideas. No one can tell what our thoughts or ideas are unless we let him know.

To-day we can do this in many ways. We can talk or write. We can use many wonderful inventions which carry our voices and messages across great distances. In Part III you read how men learned to move themselves and their loads from one place to another. This was called transportation. Part IV tells how they learned to pass thoughts from one person to another. We call this Communication.

One of the first ways that men used to communicate was by talking. Long ago early men heard many sounds around them. They listened to the wind and the waves. They heard the calls of animals and birds. When they wanted to tell about one of these, they tried to make the same sound they heard it make. Perhaps you have heard a baby call the cat "Meow" or the dog "Wuff." This is how many sounds became words. As time passed the words changed. Now we cannot tell how most of them began. In different parts of the world men learned to talk differently. That is why there are so many languages or ways of talking.

We speak the English language. Many of the words we use come from other languages. For example, the word "beef" came from the French. "Bread" is a German word. "Communication" was taken from the Latin language which was spoken long ago by the Romans. There are many others. Some of these words were changed a little when they came into English. Others, such as the French words "menu" and "bouquet", are the same in English. The words "popcorn" and "steamship" are made when smaller words are joined. New words are needed for new things. "Jet plane" and "telephone" are examples of these. Our language is always growing and changing.

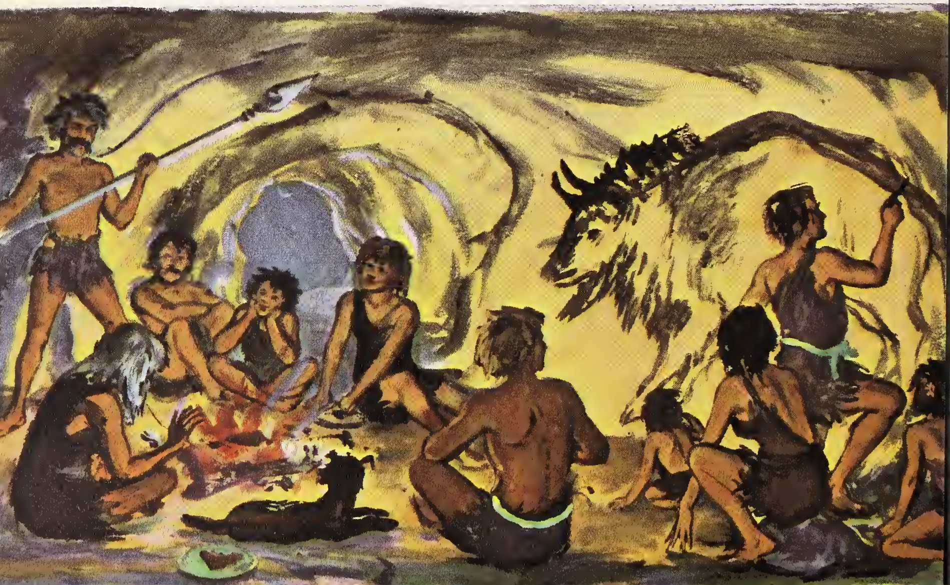
All the people who speak English do not say the words in the same way. Listen to an English or American girl or boy. They speak the English language as you do, but you can hear differences. Different ways of speaking the same language are called dialects. Many people from other lands speak English. Very often they say their words differently. We say they have an "accent." If you learned to speak French, you would most likely have an accent in that language.

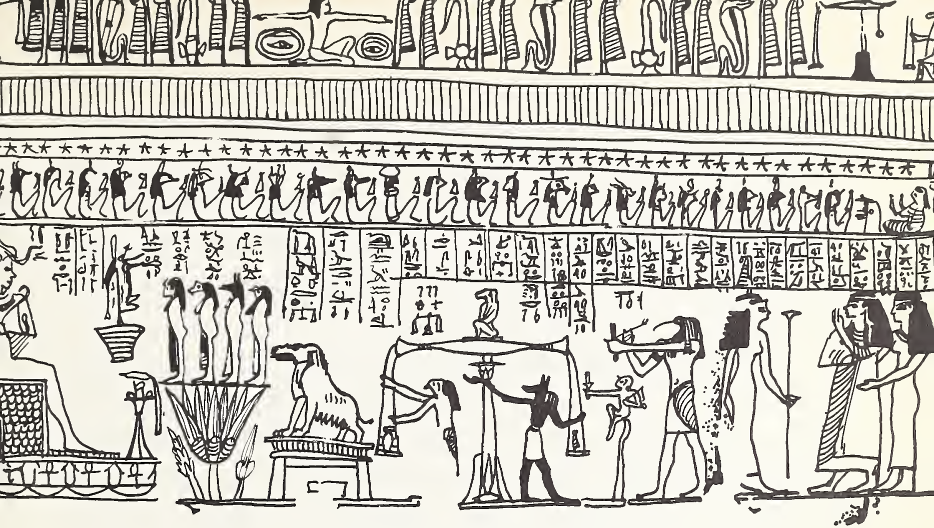
Men Use Signs

Early men also talked by using signs. They used their hands and other parts of their bodies. We often use our arms to help us when we talk. If we wave our hand the sign can be seen for a long way. If we put our first finger over our lips we mean "Be quiet." The Indians of North America talked in signs by moving their hands. To-day people who cannot hear or speak use a hand sign language.

Men Begin to Write

Ages ago men wanted to keep a record of their ideas. If they did this they would not forget, and so they began to draw simple pictures. Often they were drawn on the bare ground, or in sand, or on stones. Many pictures were drawn on the walls of caves. Long ago all writing was picture writing.





Egyptian picture writing on a wall.

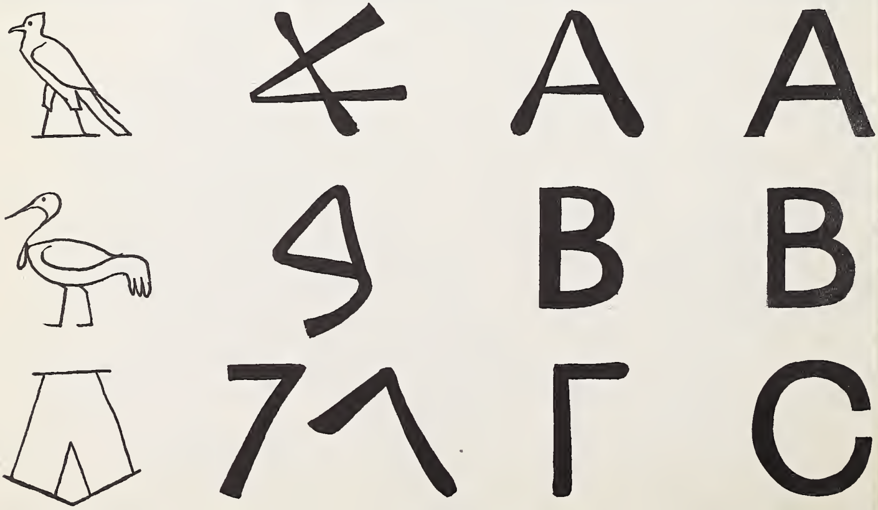
Later men tried to draw pictures of the sounds that they heard. Then, to save time they left out some of the picture. Pictures slowly changed into letters. Each letter stood for a sound. All of the different letters were called an alphabet. Then the letters could be put together to make many words.

How many letters are there in our English alphabet? You will remember that some letters, such as *a,* have more than one sound. Other letters, such as *c* and *k* often make the same sound. When we use our letters to make words, others read and understand them. Sometimes we learn to read a word all at once. Sometimes we "sound" the letters to make the word. Not long ago, you began to write. When you learn to do this well you are able to communicate with people who can read.

In Part III you read about the Phoenicians. These great traders and sailors had to have some way to keep track of their business. They began to use Egyptian picture writing. In time they found a very simple alphabet of twenty-two letters. People in other lands saw this easy way of keeping records and they began to use the letters too.

The Phoenician alphabet soon spread to Greece. The Romans borrowed it from the Greeks. Then it passed to other parts of Europe. From there it came to North America. As it travelled during many years it became different. In each country men changed it a little. To-day there are many alphabets. They are the same in many ways, but each one has its own special differences.

In the days of the earliest men there was no arithmetic. There were no numbers. To find out "how many", people learned to count. First they used fingers and toes. They cut notches on a stick, or used little stones. Then they made



Egyptian picture alphabet.

Phoenician alphabet.

Greek alphabet

Roman alphabet.

special counting marks. Each one stood for a different number. The numbers we use came from India and nearby Arabia. There are nine *Arabic* numerals and a *zero.* By using the zero and the nine numerals we can make any number. We can add, subtract, multiply and divide easily. We do not know now who first made the *zero,* but his invention was one of the greatest in the world.

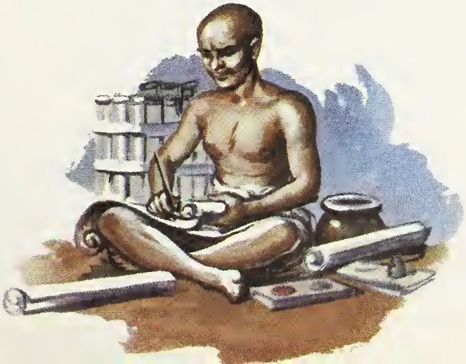
Writing Begins to Grow Up

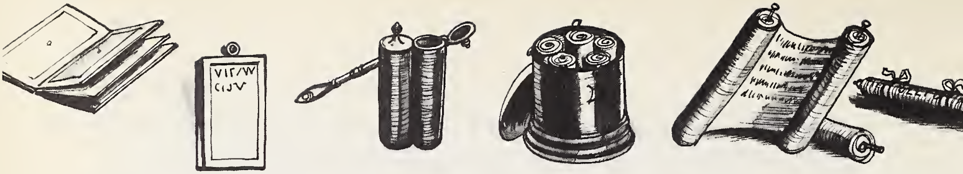
The early cave men wrote messages on the walls of their caves. But they could not carry these from one place to another, and so messages were carved on sticks and scratched on pieces of bark. Later, men carved records on the stone walls of buildings and monuments.

The Egyptians wrote on the bark of the papyrus plant with reed pens, and ink. Strips of papyrus were fastened together and made into rolls. These were the first books. Our word "paper" comes from the word papyrus.

Babylon was near Egypt. In that country the people wrote on pieces of soft clay. They used a sharp reed which made a wedge-shaped mark. The mark had three sides. After the writer was finished, the clay was baked in the

Writing on rolls of papyrus in ancient Egypt.





Roman writing materials consisting of parchment and clay tablets.

sun. This way of making records was called cuneiform writing.

The Romans wrote on boards covered with a thin coating of dark wax. They used a pointed stick or bone called a stylus. One end was flat to smooth over mistakes.

Men also wrote on parchment. It was the smooth white skin of sheep or goats. The first books with pages were made of parchment and written by hand. They were decorated in colours in many beautiful ways. Often it took a year to make a book. In those days few people except monks could read or write. Monks were holy men who helped others. They lived in great houses called monasteries. For a long time they made most of the books with great care and skill.

Men Learn to Print on Paper

Paper Making

Making books by hand was very slow work. Only one book could be made at a time. They were few, and very expensive.

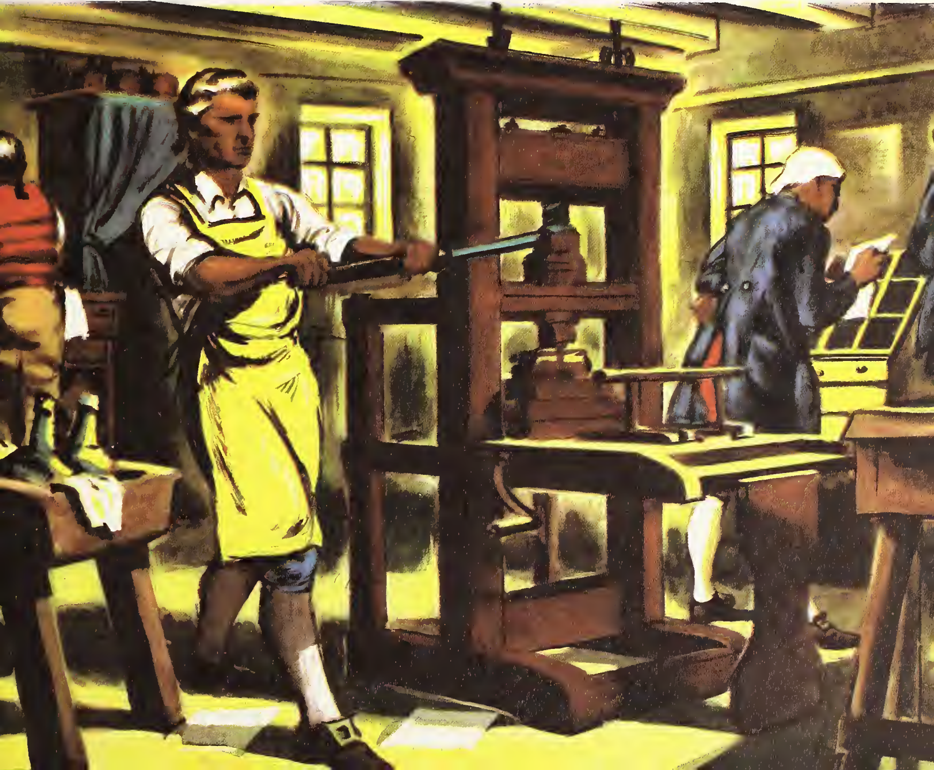
For a long time the Chinese had made paper. The people of Europe at last learned their secret, and paper-making became an important business. Man had found a cheap material on which to write. The first paper was made of ground-up rags. Later, men remembered that wasps used wood to make their paper-like nests. To-day rags are still used, but most paper is made of wood.

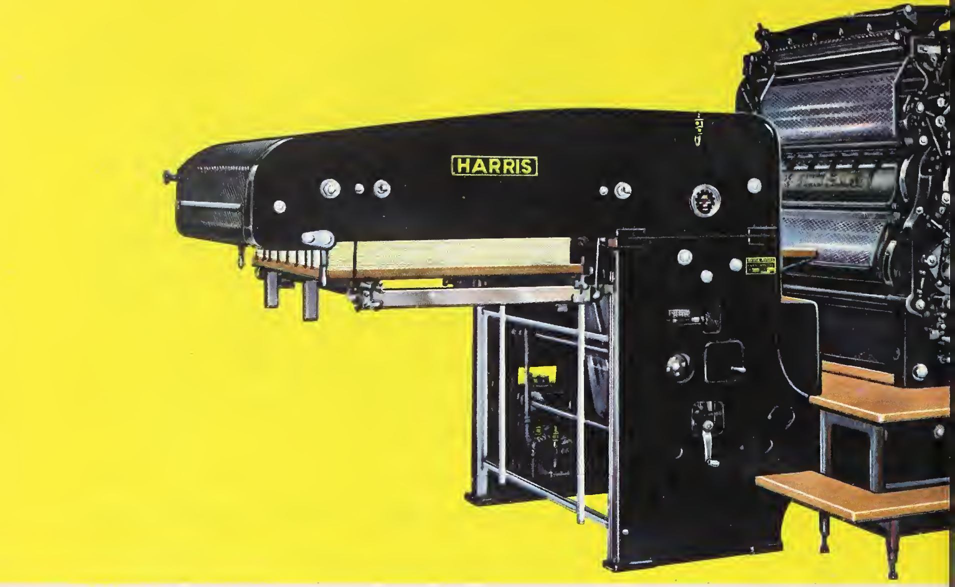
Canada is a very important paper-making country. From our forests come the trees which are made into paper. In great paper mills the logs are chewed into chips. The pieces are cooked with water and other liquids to make "pulp." The pulp flows out upon a wire screen. Water runs out through the screen as it moves along. Hot rollers press and dry the pulp into long strips of paper which are wound into great rolls.

Printing

In Europe men learned to make "block" books. Each

The first Canadian printing press. *Courtesy Canada Printing Ink Co. Ltd*

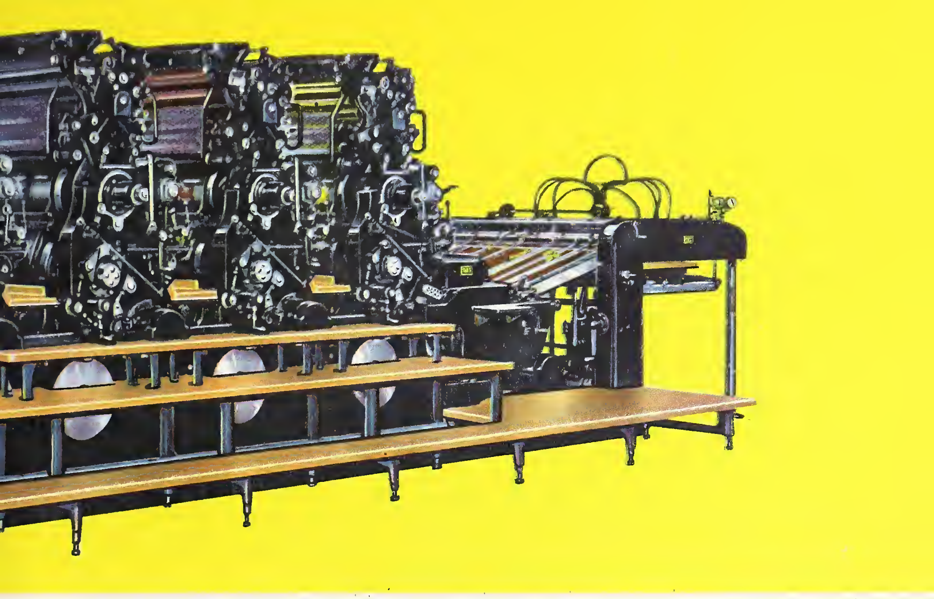




page was carved in wood. The pictures and letters were raised when the wood around them was cut away. The block was inked and a piece of paper was pressed against it. In this way one page was printed at a time. Many pages were fastened together to make a book.

Men soon had a better idea. They cut out small pieces of wood called type. On each was carved a letter. The letters were put together to make a line of words. Then the lines were placed in a frame to make a page. In this way of printing each letter block could be used again and again. Wooden blocks soon wore out and metal type took their place.

Each page of type was put into a printing press. Here the type was inked and damp paper was laid on it. The



This is a modern four-colour printing press. It is like the one on which this book was printed.

top part of the machine was "pressed" against the paper by a large screw. Then the screw was raised and out came a printed page! The first printer in Europe was Johannes Gutenberg, a German. His first book was the Bible. A merchant named William Caxton printed the first books in English. About 200 years ago a Boston printer brought Canada's first printing press to Halifax, Nova Scotia. This wooden press was used to print our first Canadian newspaper.

Printing To-day

To-day we have machines which make printing easier and faster. Giant presses print books, magazines, and newspapers as if by magic. Usually the paper is in large rolls. It is fed into one end of the press and quickly winds its way through many rollers. At the other end the folded newspapers come out, ready to be delivered.

For many years printers set their type by hand. To-day the Linotype machine does it quickly. On it there is a keyboard like that of a typewriter. Each line of print is typed on a small metal strip. These strips are put together to print newspapers, magazines, and books.

To-day printing can be done in many ways and in many colours. Millions of books are printed each year. Now almost every one in Canada learns to read. Printing has made it much easier for us to communicate.

Men Send Messages

The Post Office

In days of long ago messages were sent in simple ways. At first they were carried by runners, but later the messengers rode on horseback. When better roads were built, coaches were used. It was very expensive to send letters and service was poor. In some European countries the government began to carry mail. This was the beginning of the Post Office.

In Canada the first messages were carried by Indians. Canoes, horses, coaches and ships were used to carry mail. In time trains and airplanes were used and the postal service became better and faster.

For a few cents we can send a letter to any place in the world. When our message drops into the red mail box we feel sure it will arrive safely. A four-cent stamp will take it anywhere in our city or town. A five-cent stamp takes it to any place in Canada, Britain, or the United States. Often a letter must be delivered in a hurry. Then we can buy a Special Delivery stamp for ten cents. It is put on a letter beside the ordinary stamp. At the proper Post Office a special postman takes it at once to the right address.

An airmail stamp costs seven cents. When it is used to send mail to other lands the letter or parcel is carried by airplane. Air mail is very fast. To-day much of the ordinary mail in Canada goes by air.

Trucks carry mail from the mailboxes to the Post Office. In larger Post Offices the letters go through a cancelling machine which marks stamps so that they can be used only once.

Men sort the letters and put them into the right mailbags. Air mail and Special Delivery letters are sent out first. The bags are taken by truck to the railway station or airport. When the bag gets to the right Post Office the letters are again sorted and picked up by the letter-carriers. These postmen bring them to the proper addresses.

If you live in the country the rural postman comes in a car or truck. He leaves your mail in a box on a post near the road. Often, if there is mail to be posted, the carrier will take it to the Post Office. This saves a trip to town.

Our Post Office gives us very good service. Many workers speed our messages along. In Canada mail is transported in many ways. Airplanes, trains, cars, buses, boats and dog teams all do their share.

Men Send Messages across Space

Signals

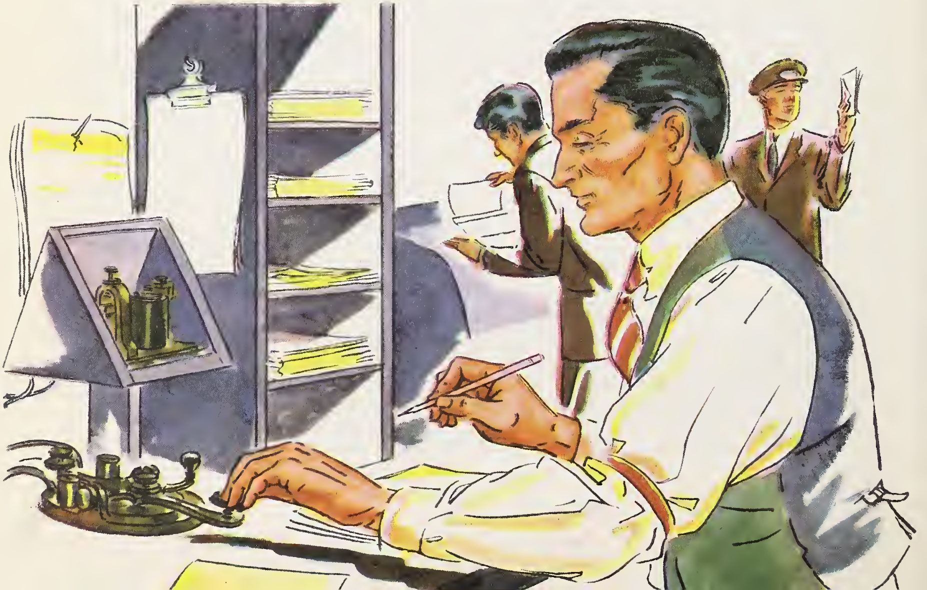
Men do not always need to carry messages themselves. Long ago they learned to send them across space. At first they shouted. Then they waved their hands when their voices could not be heard. Great fires on hilltops were used as signals. Messages were sent with torches, smoke, flags, and flashing mirrors.

To-day we use lights as signals. They are used on bicycles, cars, trucks, buses, boats, trains, and airplanes. Lights guide the pilots to the airport. Traffic lights tell us to stop, to go, and to be careful.

The Telegraph

About a hundred years ago there lived a man named Samuel Morse, who wanted to send messages far and

An operator sends a telegram.



quickly. In England men had been working with electricity. Morse found a way to send messages over a wire by electricity. His invention was called the telegraph.

At one end of the telegraph wire is a sender key. At the other is a sounder or receiver. When the key is pressed electricity runs along the wire. This makes the sounder click. Two clicks close together make a "dot." Two clicks with a longer time between make a "dash."

Morse made up a list of signals. Dots and dashes stood for letters and numbers. This was called the Morse Code which is still used to-day.

A telegram is a message sent by telegraph. The message is first written on a pad. The operator then presses the sender key to make the dots and dashes needed for the message. Good men can easily send forty words in a minute.

At the other end of the wire the dots and dashes sound in the receiver. Another operator listens carefully and writes or types the message on a piece of paper. This is the telegram which is often delivered by a messenger boy on a bicycle.

In big cities there are "teletype" machines which look like typewriters. The telegram is sent by pressing the keys of this machine. At the other end of a wire is a receiving machine. The signals sent at one end are carried by electricity and typed at the other. The message comes out on a long paper ribbon. This is pasted on a paper and becomes the telegram.

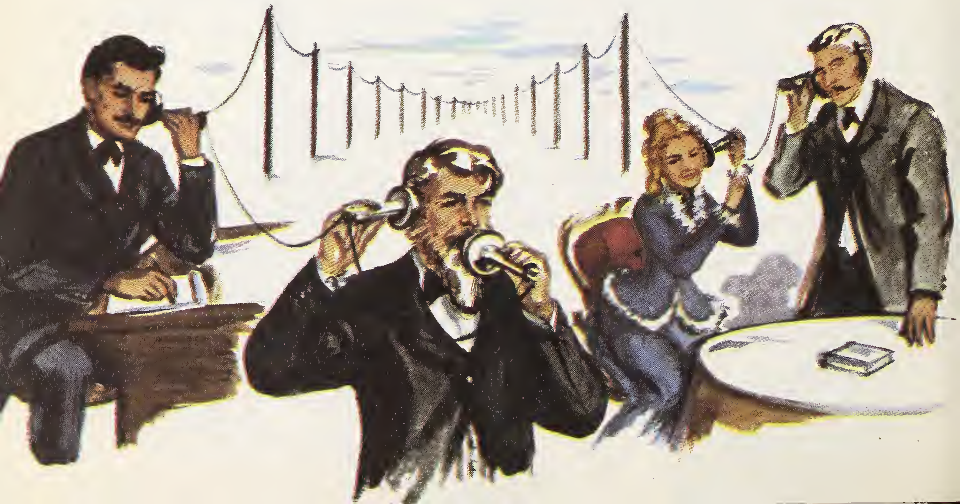
The first Canadian telegram was sent from Toronto to Hamilton over a hundred years ago. To-day millions of telegrams are sent each year in Canada. Telegrams are sent across the oceans. The messages pass along great bundles of wires called cables which are laid on the bed of the ocean. Cablegrams are long distance "underwater" telegrams.

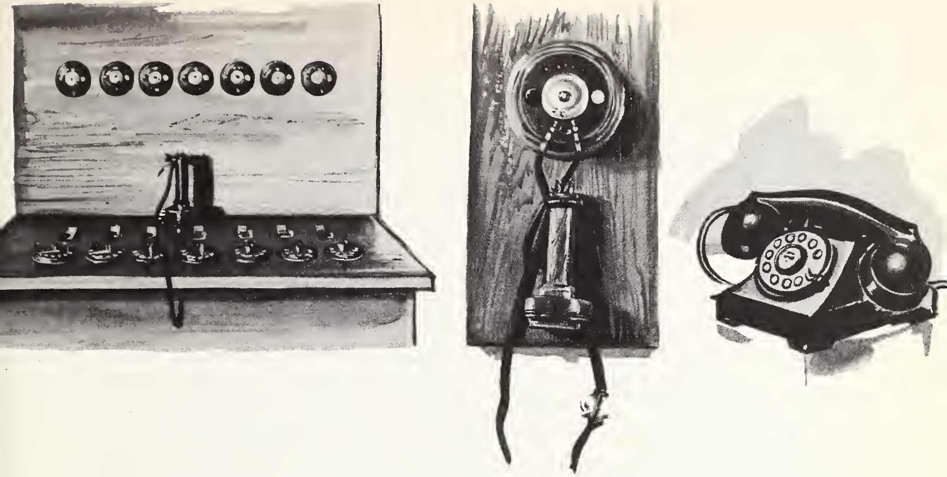
The Telephone

Many men were not satisfied to send dots and dashes over a wire. One of these was Alexander Graham Bell. One day he was visiting his father's home in Brantford, Ontario, where he had a great idea. He found a way to talk over a wire! His invention is called the telephone.

The first words ever heard over the telephone were those spoken by Mr. Bell to his assistant, Mr. Watson. The two men were in different rooms. Imagine Mr. Watson's surprise when he put the receiver to his ear and heard Mr.

Bell uses electricity to send messages over wires.





The first Canadian switchboard at Hamilton, Ont. One of the first telephones used in Canada, and a modern dial telephone.

Bell's voice saying, "Mr. Watson. Come here. I want you."

When we talk, our voice makes the air tremble or vibrate. If we speak into the telephone mouthpiece these vibrations are carried along the wire by electricity. At the other end of the wire is a telephone which receives the vibrations. The receiver turns them into sounds and words which can be heard.

To-day there are telephones in almost every home. Each telephone has a different number. In some places we tell the operator the number we want. She connects the proper wires and we begin to speak. In other places there are dial telephones. We turn the round dial to the proper letters and numbers. Instead of an operator there is electric machinery which connects the wires.

At the telephone office there is a great switchboard. All telephone messages pass through its wires. Most of them are "local" calls. But many others are to people in other places or countries. These are “long-distance” calls. Bell’s first long-distance call was sent for eight miles from Brantford to Paris, Ontario. Telephone service has become better and better. Soon long distance calls will be as easy to make as local calls.

Girls and boys should learn to use the telephone properly. They should speak clearly and politely. Telephone calls should be brief, because others may wish to use the line. We should remember some important phone numbers. Do you know your own number? Could you call your doctor, the Fire Department, or the Police Station without using the telephone book? It is a good thing to be able to call these important numbers quickly when we need them.

Most telephone wires are on poles but in cities they are often underground. Telephone men are always busy taking care of telephones, wires and poles. Operators are always on duty to help you get your message through.

Bell’s first telephone looked like a box. He would be very surprised to see how the telephone has grown up.

The Radio

Some men were not satisfied to send messages over wires. They wanted to send them through the air. An Italian named Marconi invented the wireless telegraph. Without wires he sent Morse Code messages across the Atlantic Ocean. He used electric sound waves to carry the dots and dashes. Have you ever thrown a stone into a pond of still water? The sound waves travel through the air in the same way that the waves spread over the water.

Ships still use the "wireless" telegraph. With it they can keep in touch with the land and other ships. They can send and hear calls for help. The wireless telegraph has made water travel much safer.

Many clever men worked to make the wireless telegraph better, and soon they could send the sound of their voices by wireless. This invention is called radio.

The first radio sets were much different from those we have now. Outside each house was a high aerial wire to catch the sound waves. Those who listened wore ear phones. On the radio sets were many dials and knobs to twist and turn. The first loud-speakers were great horns. To-day there are radios of many kinds, and most of them are quite simple to use.

Radio programmes are broadcast by a radio station. Each station has its own name, or call letters. In Canada they always begin with the letter "C". Men called announcers often give the call letters and the name of the town or city where the station is located.

On our receiving sets each station has its own special place. To get different stations on some sets we press buttons. On others we turn a little knob.

Some radio stations are very small, but others are large buildings. The broadcasting is done from rooms called studios. Here there are microphones, which are something like telephone receivers. The words or music go through them to high towers. Electric waves carry them on to our radio sets.

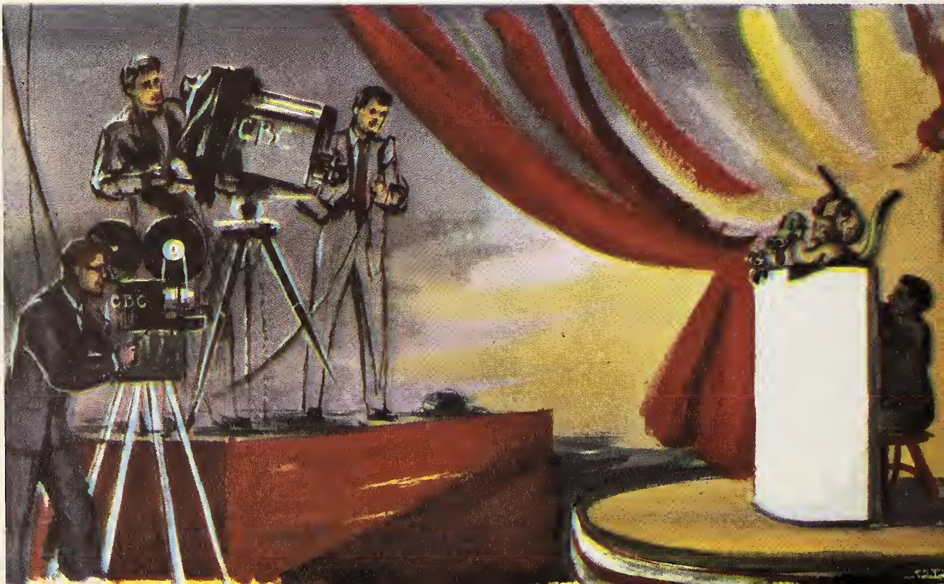
Most Canadian homes have radios to-day. We wait for the news broadcasts and enjoy the music and other programmes. The farmer and the fisherman listen carefully to the weather reports. The police use the radio to send messages quickly. In many parts of Canada girls and boys listen to school broadcasts every week. The radio has been a great help to many people.

In Canada there are many radio stations. The largest radio company is the Canadian Broadcasting Corporation (C.B.C.). It operates many stations and is owned by the people of Canada. Canadian stations broadcast many programmes each day. On our radios we often listen to stations near home. On many sets we can hear broadcasts from all parts of the world.

Television

For many years people listened happily to their radios.

Television cameras take pictures of a puppet show.



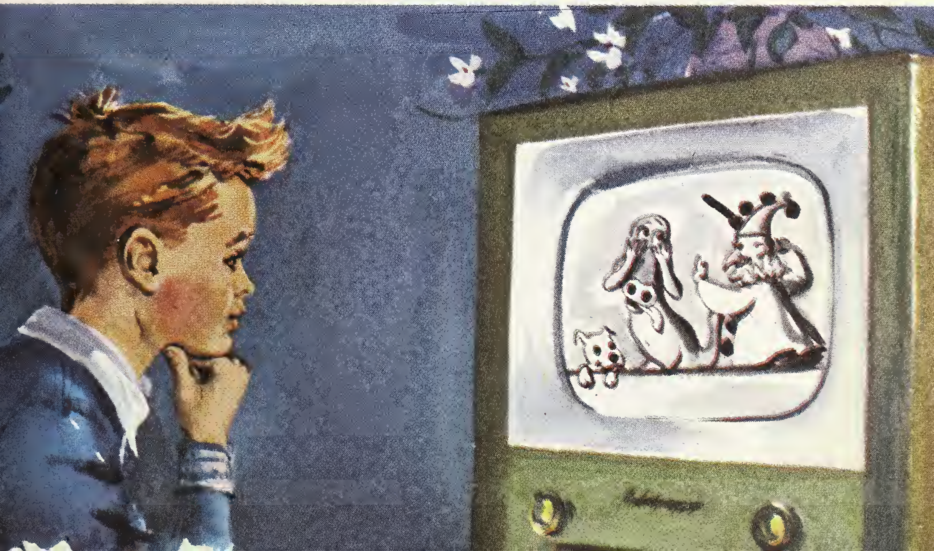
At the same time some men were hard at work making new magic. At last they discovered how to send pictures through the air—without wires! This was television.

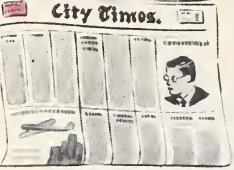
Each year more people have television receivers. Above many houses are high aerials. These tall steel fingers catch the pictures from the air and pass them to the television set. In each set there is a large glass tube. One end of the tube is the screen on which the pictures are shown. We sit in comfortable chairs to see and hear what is happening many miles away.

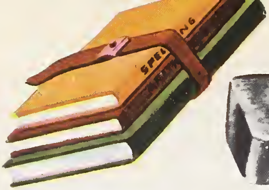
Programmes are sent out from television stations. There, in the studios, great cameras take pictures of what is happening. The pictures are flashed from the top of tall towers. Electric waves carry the pictures through the air to our television sets.

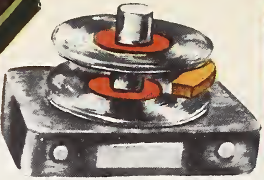
Television is still a very young invention and each year it becomes better. The picture is larger and clearer. Soon,

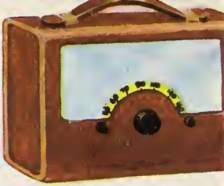
A boy watches the puppet show on his T.V. set.







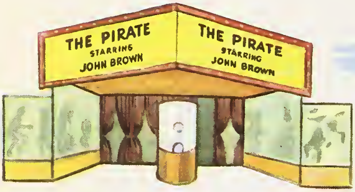


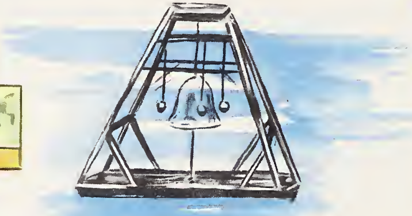


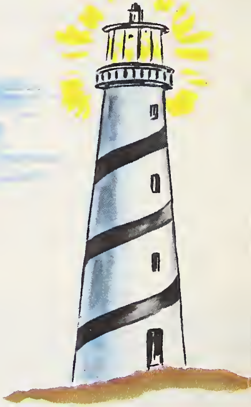
instead of black and white pictures, we will see television in colour.

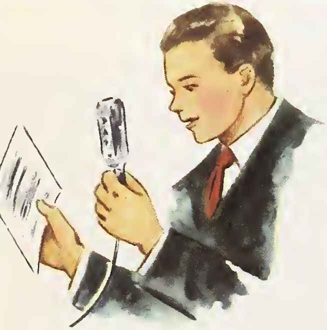
In the days to come more wonders will come to us by television. We may be able to telephone, and *see* the person we are talking to as we speak to them! Perhaps we will see what it is like on the moon!

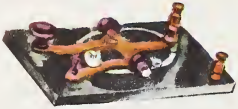
There are pictures on this page showing several methods of communication. Can you name them?

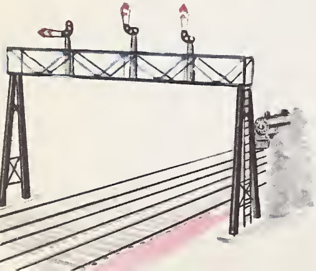

THE PIRATE
STARRING
JOHN BROWN
THE PIRATE
STARRING
JOHN BROWN

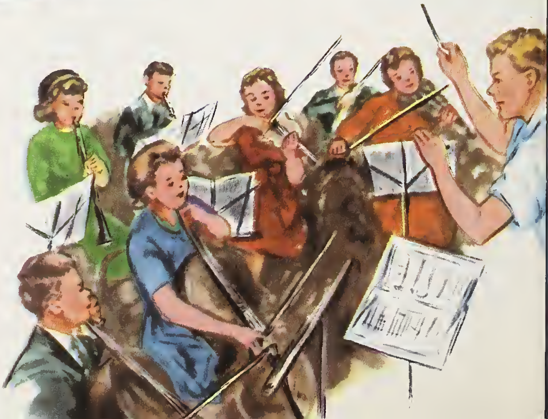












PART V

MAKING A LIVING

The best way to learn about a country is to go to see it yourself,—but this is not always possible. Canada is so large that it would take a very long time to see it all. Such a long trip would be very expensive.

In Part IV you read how men learned to write and to print. They did this so that they could communicate. If we cannot really travel as David and the twins did, we can journey far by reading about Canada. As you go on, remember that you are reading about Canadians. You will find that there are many different kinds of people across our broad land. They are not like you in many ways. But in many others they are the same. As you read about these fellow Canadians compare them with the people in your community. How are they different? How are they alike? And the last and most important question you should always ask yourself is "Why?"

How Men Learned to Farm

Seeking Food Long Ago

Thousands of years ago, finding something to eat was work which had no end. All day long father, mother and children looked for food. They *ate* it where they found it, and then began looking for more. The only sure meal was one that had been eaten! A child learned to find food and to put it into his mouth quickly. This never-ending search was the most important part of the family life. To-day, in some parts of the world where there are no farms, some people still live in this early animal-like way.

Learning to Tame Wild Animals

Later, men caught wild animals and tamed them. Sometimes young ones were captured alive. Often they were not killed and eaten because they were too young to make good food. But maybe there was a better reason for keeping them. Perhaps the children wanted to keep them as pets! Sometimes the young animals were not caught, but followed their dead parents as the hunter dragged or carried them home.

The young animals grew up as playmates of the children. Then they were no longer wild. When they became tame, they did not run back to their old homes. Perhaps the dog was one of the first wild animals to be tamed, or domesticated. In the forests he may have been a fierce wolf-like creature. Now he became one of man's best friends. He guarded the cave or house. He helped his master to hunt small animals and birds for food. Another early member of the family was the cat. Even to-day it is easy to see how much a cat is like a tiger.

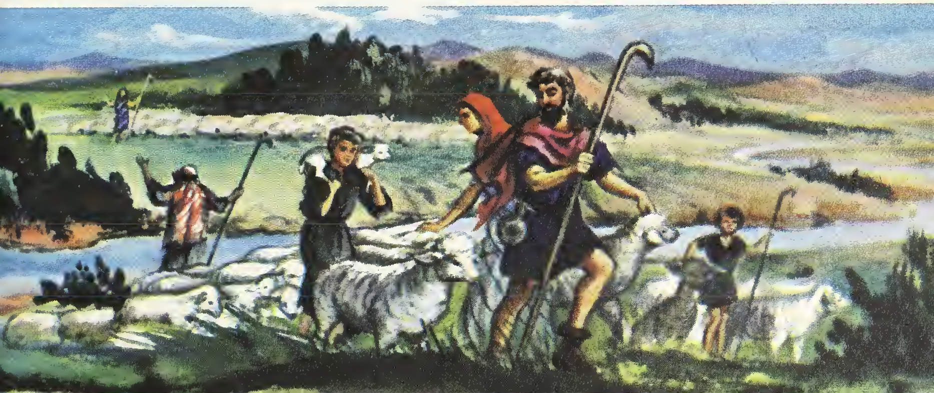
Learning to Herd Animals

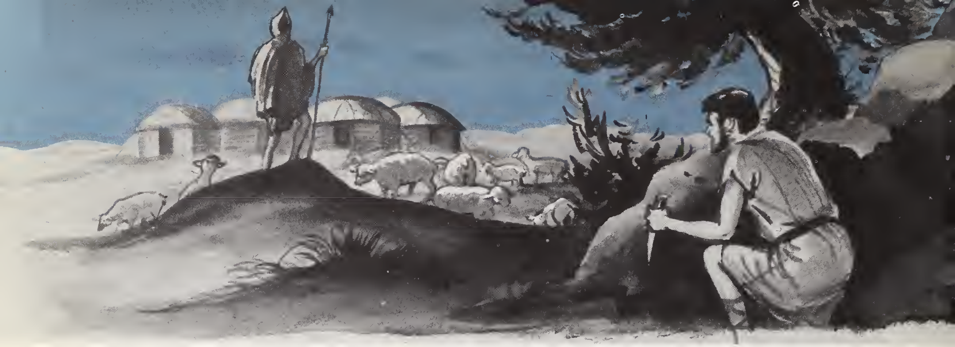
In time men captured and domesticated horses, cows, sheep, goats and other animals. They were sometimes trapped in a canyon. Often they were caught in traps made by covering a deep hole in the ground with grass and sticks.

These animals were herded near man's cave homes. As they increased in numbers, the families found that they did not have to hunt every day. They stayed near home and killed animals from the herd when food was needed. Dogs often helped to look after the flocks and herds.

Women of long ago often saw young animals drinking their mothers' milk. They may have thought that this food would be good for people, too. Soon cattle and goats were being milked, and the milk was fed to the babies and children. After the milk had soured men learned to make cheese. They also found out how to shear the sheep's wool and to weave it into cloth. In this way they could

Men learn to herd animals.



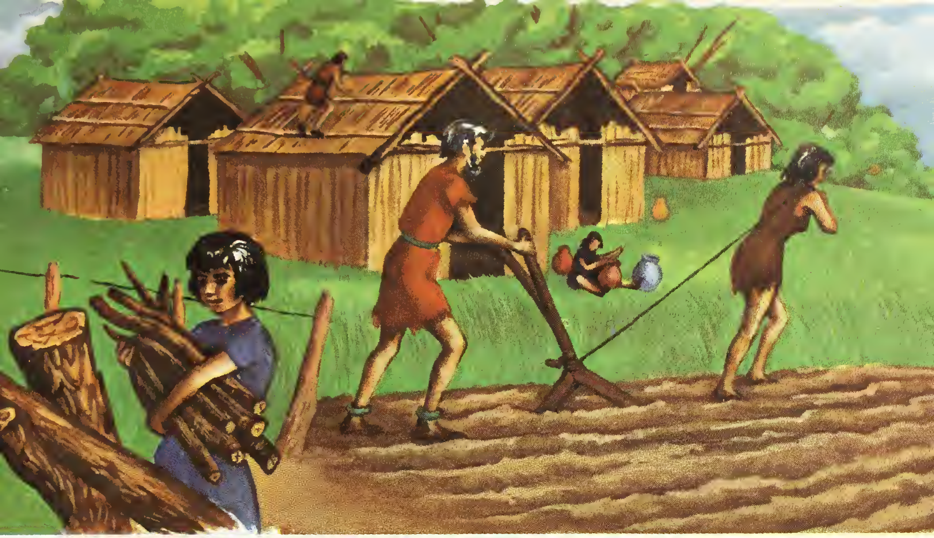


Robbers often attack the shepherd and his sheep.

make clothes without killing the animals for their skins and furs.

As time passed the herds of cattle, horses, goats and sheep grew larger. Men soon found that there was not enough grass near the caves for animal food. Families began to move with their herds from one cave to another. New pasture had to be found. If there were no caves near the grasslands, men learned to make tents from animal hides. Soon groups of families were travelling from one pasture to another. People who move their homes from place to place are called *nomads*. In many parts of the world nomads still live. You will read about some of them in Part VI.

The life of the nomad was often dangerous. Fierce wild animals and robbers attacked the herds. The people themselves were often killed with their animals. As they journeyed from one place to another, nothing was safe. To fight against their enemies, many families banded together to protect themselves and their herds. During this time they were learning something which would change their way of living.



The women worked very hard on some early farms.

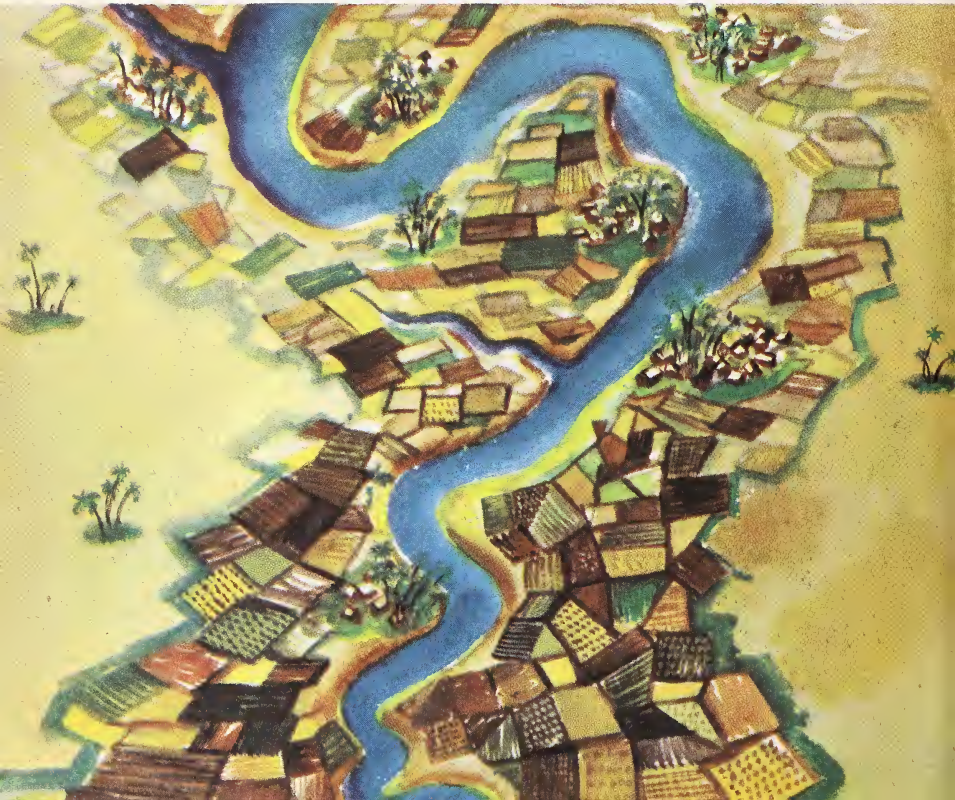
Men Learn to Farm

Men who guarded the flocks were called shepherds. These men, with their dogs, had much time to watch the animals feeding. They saw that some grasses made the animals grow fatter than others. The flocks and herds often ate plant seeds which seemed to be very good for them. Seeing this, the people began to eat seeds, too. While eating they dropped some of the seeds outside their caves or tents. Perhaps their table manners were not the best! After a rain the seeds began to sprout and grow. The people who had been nomads noticed this. They began to gather the seeds and to plant them. They were happy to discover that now they did not have to hunt for new grasslands. Men could grow grass for their herds and seeds for themselves and their animals. These people were the first farmers.

At first the women did the hard work of farming. They gathered the seeds and sowed them while the men were busy guarding the flocks. To plant the seeds, a woman dug up the earth with a fork-shaped tree branch, or with a hoe made from a hard stone called flint. A piece of this stone was ground smooth and fastened to a stick handle.

As time passed men learned to make wooden ploughs which broke the soil before seed was sown. Larger fields of barley, wheat, millet and other seeds were planted. In the language of farming these seeds are called *grains*. Soon they were making curved wooden knives, or sickles, to cut

A picture of the Nile river. Beyond the little irrigated farms is the desert.

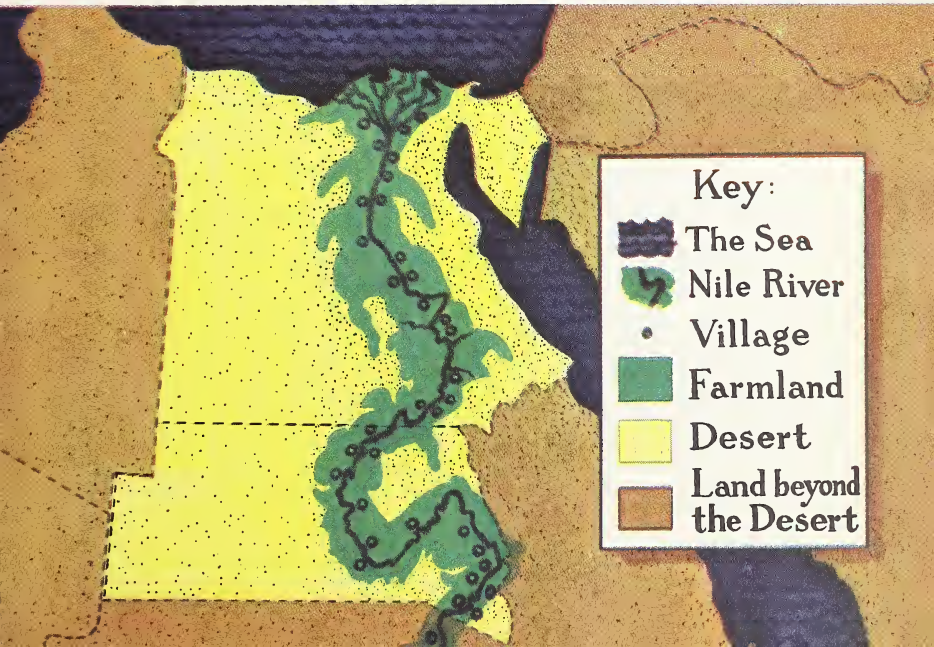


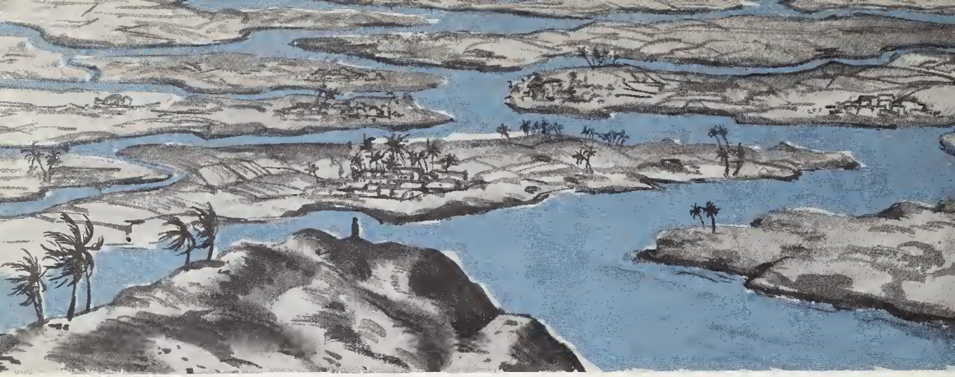
the grain. The sickle blade was sometimes made of sharpened flint. The first threshing machines were cattle! They were led over the cut grain to trample the seeds, or kernels, loose from the plant stalks. Sometimes the grain was shelled by the strokes of a flail. This tool was a short, heavy stick fastened to a handle by a leather strap. Sometimes the grain was pounded with the end of a heavy log. Later, it was made into powdery flour between millstones. The grain was placed on one stone and ground by another.

Farming in Ancient Egypt

When farmers began to till the fields and plant seeds, they studied the soil carefully. They soon learned that seeds grow best in a rich, good earth. Often they found this kind of soil along river banks.

A map of the Nile river. The yellow part is the desert in Egypt. The brown part is the desert beyond Egypt.



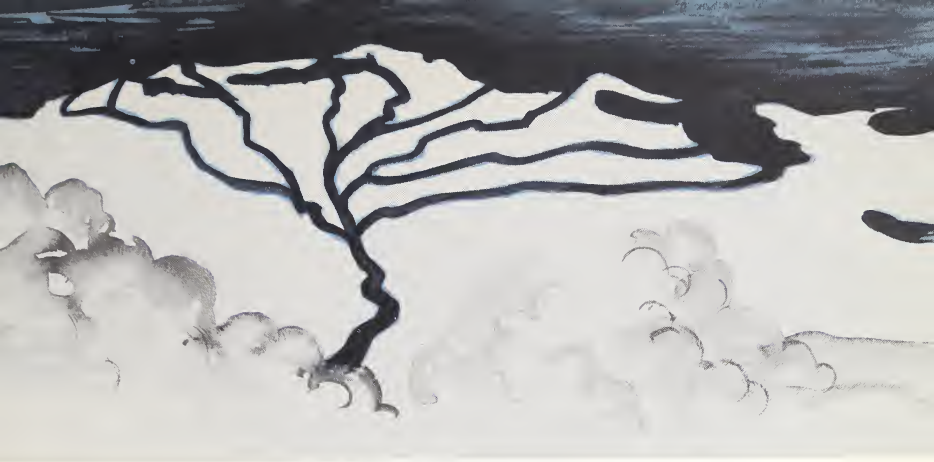


Part of the Nile river delta. The river parts to make many channels.

Beside the Nile River, in Egypt, men found rich farm land, and good grassland for pasture. On each bank of the river was a strip of excellent soil more than ten miles wide. Because the soil was loose, it was easy for women to plough and plant. The warm weather was good for growing. Heavy clothes and heated houses were not needed. It was a good land in which to live—and to farm.

The Nile River has its source in high mountains far to the south of Egypt. Heavy rains fall there every spring. A strong current of rushing water picks up rich soil from the mountain slopes and carries it to the broad Nile valley. The flat land on the banks of the Nile is desert where very little grows. Most of the desert soil is sand like that on the beach. When the great springtime floods reach this part of the river, they spread over the banks and cover the land for many miles. When the waters go down, they leave a thin layer of muddy silt over the land. This is rich soil for growing crops. For thousands of years the Nile has built up good farming land in its valley.

At the mouth of the Nile River is a large delta. It has

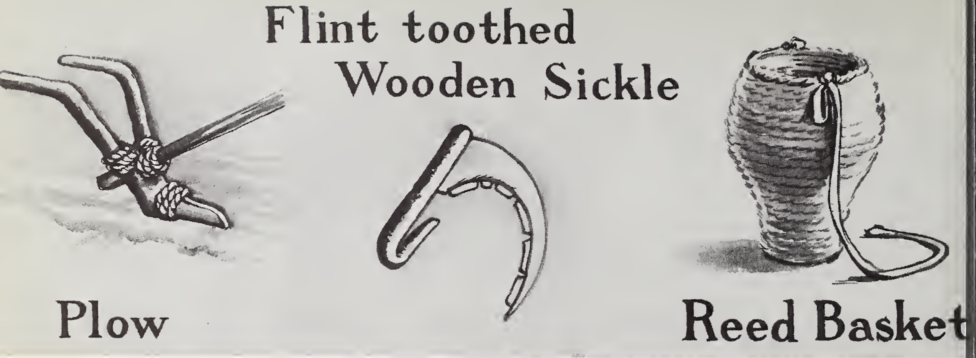


A map of the Nile delta.

been formed by silt which was not left on the river banks.

Early dwellers in the Nile Valley did not know about the floods. They built homes near the river, planted their seed, and harvested a good crop. Then came the rushing waters. The flood washed away their homes and covered their farms. It did not take them long to learn that they must build homes farther from the river banks.

In time they found that in some years the floods were smaller. They discovered that the crops were poor then because there was little rich silt from the south. To make matters worse there was not enough water. They learned to build large storehouses. In these they kept the grain from good harvests to use in years when the crops were poor. They used dams to hold water which came during the floods. Later, when the weather was dry they dug ditches to let the stored-up water flow to their fields. This way of watering crops is called *irrigation*. It is used in many parts of the world to-day.



Some implements used by the first farmers.

Raising Crops in the Nile Valley

Early farmers first dug the soil with sharp sticks, and later, hoes. They used a simple two-man plough which was pulled by one farmer and guided by another. Oxen were harnessed to ploughs and a man walked along in the shallow trench behind. The driver guided the plough and used its handles to make the plough point dig deeper into the soil. Men who sowed the grain followed the ploughman. They dropped wheat and barley seeds into the ground. Other men or women workers covered the seeds by pulling a heavy branch over the furrows. Some farmers turned herds of animals into the fields to trample the seeds into the ground.

When the grain had grown and ripened it was cut with sickles. The workers stacked it in piles to dry, or loaded it into baskets carried on the backs of donkeys or other animals. When it arrived on the threshing floor it was trampled by oxen, or flailed by the busy women. The grain was usually kept in large storehouses.

The early Egyptians also grew flax to make linen and hemp to make rope. They also raised many vegetables which we grow to-day.

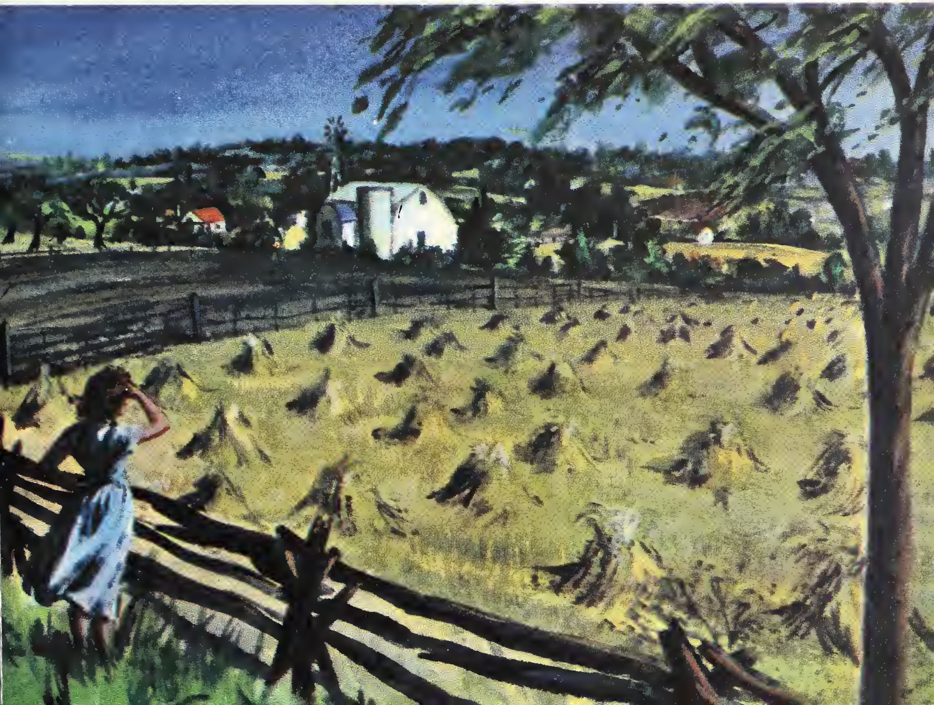
In this simple way farming began in the Valley of the Nile. For thousands of years this most important industry changed very slowly.

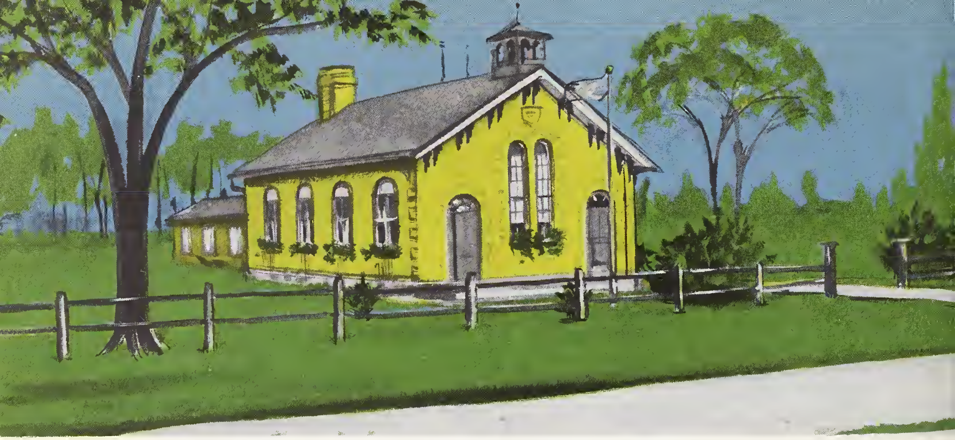
MAKING A LIVING IN CANADA

The General Farm in Canada

Many girls and boys who read this story live on a general farm. Their home may be near a small town or village. It may be not far from a large city such as Halifax, Toronto,

A general farm in Southern Ontario.





This is a rural school. When do you think it was built?

Winnipeg or Vancouver. Their school may be in a town or village. Perhaps they go to a school with one room, where one teacher teaches all grades. Rural schools may be on side roads, or on concession roads which criss-cross the country. By these roads the farm people go from their homes to school, church and market.

Going to School

Some pupils may live far from the school. A bus may meet them at the road in front of their farm home. This bus picks up pupils from all the farms in the school area. It takes them to school each morning in every kind of weather. The children take their lunches with them. Sometimes there is a stove or lunch room at the school. Then the teacher, helped by the children, makes soup or other hot dishes for lunch.

When the school day is over the bus is waiting for the children to come running out. They climb in and the driver takes them home again. The school area in which the children live provides the school bus each day.

Not all general farm communities have school buses. Some girls and boys walk a long distance to school. Some are taken in their father's car. Many children live only a mile or so from school. They can walk there and back easily.

Animals on the Farm

During the winter and early spring the cattle and sheep are kept in the barn. There are two kinds of cattle on this farm. The beef cattle are fattened and shipped to the city market. The butcher gets his meat from these animals.

There are also cows which give milk. If the general farm is near a town or city the milk may be sold to a dairy. Often it is taken to a factory where it is made into cheese. On many farms there is a machine called a separator. It takes the cream from the milk. The cream is sold to the creamery for making butter. What is left after separating is skim milk. The farmer feeds it to the calves, pigs, or chickens. The creamery may send a truck to pick up the cream and milk. Sometimes the farmer may take it to the village in his own car or truck.

The general farmer may keep some horses, sheep, pigs and poultry. The horses are used to do heavy work on the land. These faithful animals are disappearing as the

farmers buy more tractors. The wool of the sheep is sold for making cloth. Its flesh, called lamb or mutton, is used for food. The pigs are fattened and sent to the city market. Later they come to the table as pork roasts and chops, hams, bacon, and sausage. The chickens produce eggs, or are sold for eating.

Boys and Girls at Work

Children on the general farm are busy people. Their everyday duties are often called "chores."

The boys usually help their fathers before school and when they return in the afternoon. They may help milk the cows, feed the cattle and pigs, and cut wood for the fires. On most farms there is a bush or wood-lot. The wood from it is burned to heat the house. It is cut during the winter when the farmer has less work to do. On some farms

Sheep rest after feeding.

wood is not easy to get. Then coal or oil is used for heating.

On many farms the mother and her daughters look after the chickens, ducks, and geese. They feed them in the morning and afternoon. Gathering the eggs is a chore which even the very young children like. The girls may also plant vegetable and flower gardens in the spring. During the summer they hoe and pull weeds. In the fall they help to harvest the vegetables. Often they help to make jam and jelly. How proud they are of the long rows of delicious fruits and vegetables on the shelves!

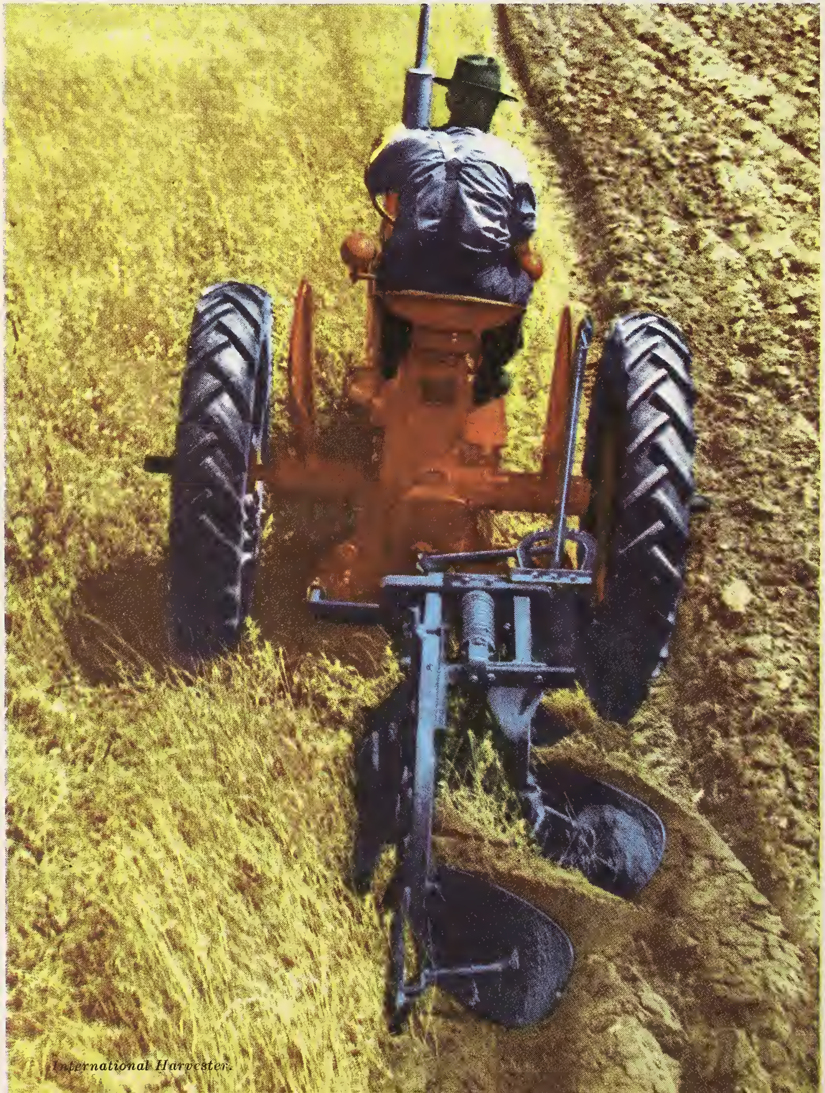
Spring Comes to the Farm

The coming of spring is a wonderful time! As the sun becomes stronger, the snow melts. The ground becomes warm and the grass begins to grow. The sheep and cattle are turned out of the barn. It is easy to see that they are happy to graze in the pasture again.

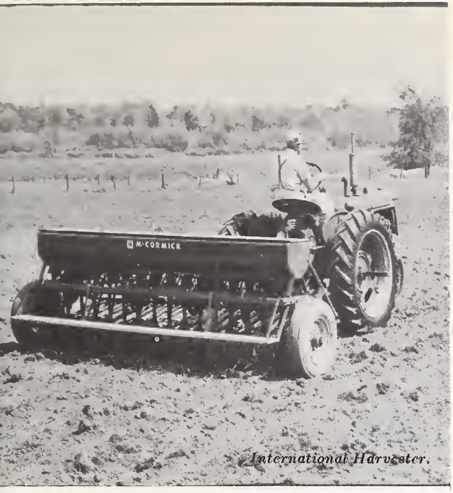
Now the farmer must begin to get his land ready. Planting the seed is one of his most important jobs. He knows that the cattle and sheep will return to the barn next winter. He must have plenty of food for the animals. Last year or the year before he planted grass for their winter feed. When this grass is dried it is called hay.

Before he plants the seed, the farmer must first till the soil. This he does with a plough and a cultivator. These machines are pulled by tractors. The plough cuts the soil and turns it over in long furrows. The cultivator digs it up into small, fine pieces so that the seeds can be sown in it. Usually the farmer likes to plough his fields in the fall and cultivate them in the spring. The seeds are sown in a neat row by a *seed drill*. This machine, which is also pulled by a tractor, covers up the seeds as it passes over the field.

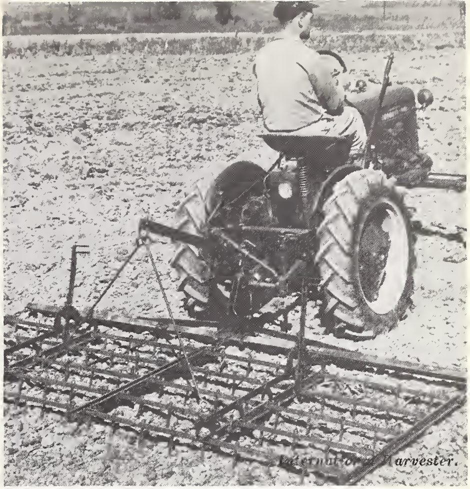
The plough cuts the soil and turns it over in furrows.



International Harvester.


International Harvester.

A seed drill.

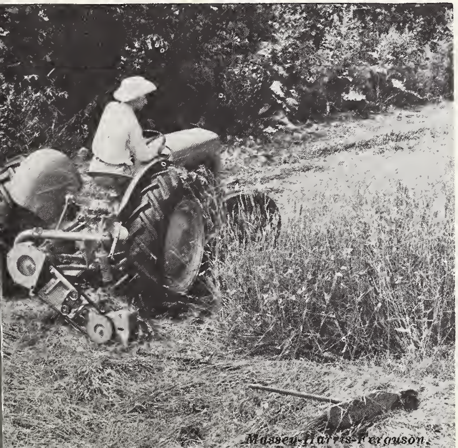

International Harvester.

The ground is often harrowed after the grain is sown.

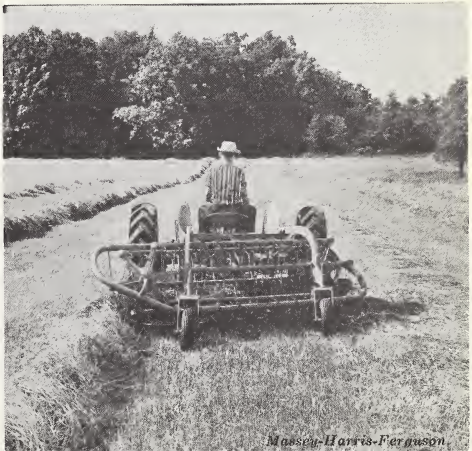
Summer Days

During the long summer days the children are home from school. At this busy season they can help their mothers and fathers. In June the hay may be ready to be cut, dried, and transported to the barn. It is cut with a *mower* and left to dry in the sun for a few days. Machines are used to rake it into rows. There are several ways of taking the dried hay to the barn. The farmer may pitch it on the wagon with a fork. As he does this his son builds

Cutting hay.

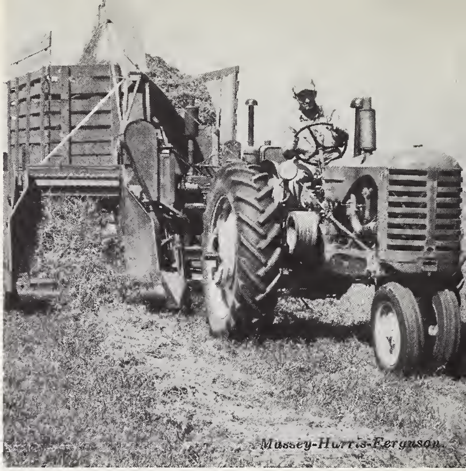

Massey-Harris-Ferguson.

Raking hay.


Massey-Harris-Ferguson.

Massey-Harris-Ferguson.

Baling hay.



A forage harvester.

the load and tramps it down with his feet. Sometimes the hay is lifted to the wagon by a hay loader. This machine is pulled behind the wagon. When the great, swaying load is built, the wagon is driven to the barn. Here it is unloaded into the haymow.

Not long ago this work was done by hand. Now, in many barns the loads are taken off quickly by a great fork. It runs along a track at the top of the barn and is pulled by strong ropes. In some places the hay is cut into small pieces by machines. Then it is blown into the haymow through a long pipe. During the winter the hay is fed to the horses, cattle and sheep.

On some farms to-day the hay is made into bales. The *hay baler* is pulled down the rows of raked hay. This machine gathers up the crop, presses or rolls it into square or round bundles. Then it ties them with wire or strong cord. The bales are dumped out upon the ground. Later they are loaded on a wagon or truck and carried to the barn. Here they are stacked in neat piles to be used during the winter.

One harvest is followed quickly by another. After the hay is safely in the barn, it is usually time to cut the "fall" wheat. This crop was planted the autumn before. It began to grow a little then, but during the winter it remained under the snow. In spring the warm sun and rains make it grow again. By July it is full grown, ripe, and ready to be harvested. The kernels of wheat grow at the top of the plant. The long stem or stalk is called the straw.

Some farmers cut their wheat with a *binder.* This machine is pulled by a tractor. It cuts the grain and ties it into neat bundles called sheaves. Several of these are picked up later and placed together with the seed, or grain, at the top. In some parts of Canada these piles are called shocks. In other places they are called stooks. In a few days the grain dries and is ready to be threshed. This means that the grain is separated from the straw. Not much wheat is harvested in this way to-day.

On many Canadian farms harvesting is done in a more modern way. A machine called the *combine* is used. It is both a binder and a grain separator. The tractor pulls the combine through the standing grain. It cuts the grain and separates the wheat kernels from the straw. The straw is blown out on the ground. The wheat kernels are put into bags. The wheat may be stored in the farmer's storehouse,

A combine on a general farm

Massey-Harris-Ferguson.

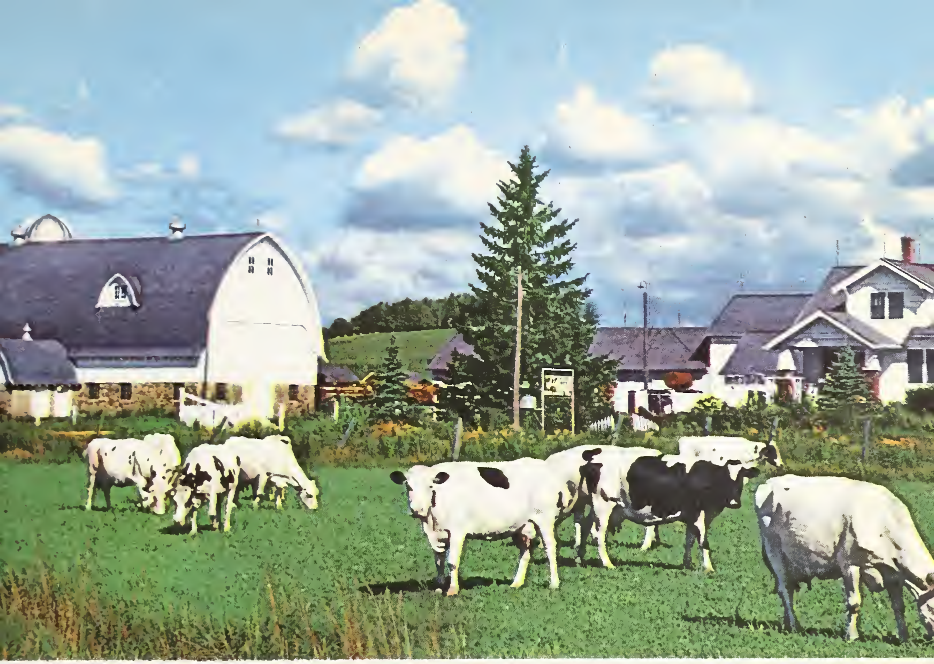
or granary. Later it may be trucked to the village and sold.

Later in the summer, oats and barley are harvested in the same way as the wheat. In September it is time to cut the corn. Most of the corn grown on Canada's general farms is not raised for the kernel. The corn stalks are harvested while they are still green. They may be cut by a corn binder and tied in sheaves. The farmer takes the corn to the barn while it is tender and full of juice. Another machine cuts the stalks into very small pieces. These are blown through pipes into a *silo,* which is a tall, round storehouse with no windows. Men or boys tramp the corn down firmly. It is left to feed the cattle during the winter.

The newest way of bringing in the corn is with a *forage harvester.* This machine is pulled behind a tractor. Down the standing rows of corn it goes. It cuts the stalks, chops them and blows them into another wagon. The chopped corn is then taken to the silo.

You have already read of the great changes in transportation and communication since early times. Remember how the Egyptians first farmed in the Nile valley. How did their life compare with farm life to-day? What is the main difference?

The general farmer is a busy man. But his life is not as hard as it was a few years ago. Machines do much of his work. Electricity and gasoline engines are his helpers. Many farm homes have running water and modern bathrooms. They may have a telephone, radio, and television. Most farm families have cars, and better roads are built each year.



The Dairy Farm

Many Canadian farms are near towns or cities. This is a picture of a farm near a big city. The owner keeps sixty cows, but he does not raise them for meat. He sells milk and a few cows and calves. The milk is usually sold to a dairy. For this reason the farm is called a dairy farm.

The cows in the picture are dairy cattle. From spring until fall they live in the pasture. Here they feed on the thick grass. The barn in the picture is the winter home of the sixty cows. They are also brought into the barn at milking time.

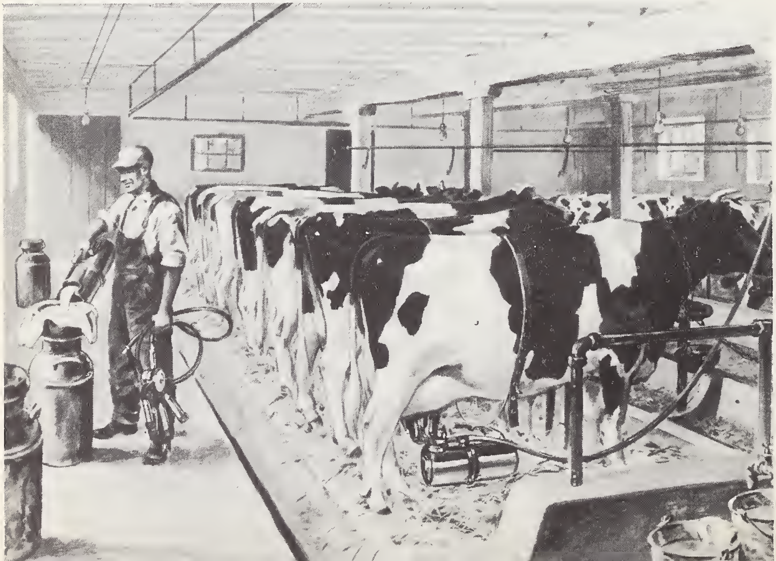
Milking the Cows

It is an early morning in June on the dairy farm. The farmer and his son have brought the cows into the barn. There they are in two long rows, thirty on each side. Here comes the son carrying a bag. From it he gives each cow a breakfast of chopped-up food, or meal. It may be bran, which is the outside covering of grain kernels. Or the meal may be made of soya beans. The farmer bought it from a feed store in the nearby city. This food is good for the cows and helps them give more milk. They lick it up eagerly as they are being milked.

The cows on this farm are milked by a machine. It is run by electricity. The farmer plugs in the cord before he fastens the rubber milker cups to the cows. When he turns the machine on, the milk is drawn from the cows. The farmer milks the cows in one row while his son attends to those in the other row.

After the milking machine has done its work, the cow is carefully milked by hand. This is to get any milk which

In one end of the dairy barn, the cows are being milked by machine.



the machine did not take. It is called "stripping." Sometimes a cow will give a cupful or more in this way. Often the milking machine has taken all of the milk.

Near the barn, or attached to it, is the milk house or dairy house. In it is the milk cooler. It is like a large refrigerator and is used to cool the milk. In this place the milk is strained and quickly cooled. It will stay sweet much longer if it is kept cool.

Did you notice how clean the cows, the barn, the milk house and the milk were kept? Men from the Health Department come to inspect the buildings and the cows. They also test the milk to see that it is pure. If everything is not kept clean, the farmer cannot send his milk to the dairy.

On most dairy farms, the cows are milked in the early morning and then again in the late afternoon. Each morning a truck picks up the cans of cool milk. The milk from many farms is brought to the dairy in the city.

The Dairy Farm is a Busy Place

There is always work to be done on the dairy farm. In the spring the cows are quietly feeding in the pastures. Then the farmer and his sons are busy planting corn and grain. During the warm summer days they harvest hay and grain. When autumn comes they cut the corn and fill the silo. In winter the ground is frozen and the pastures are deep in snow. During the cold weather the cows live in the barn. Each day they must be fed and milked. The barn must be kept clean. The milking machines, pails and cans must be carefully washed.

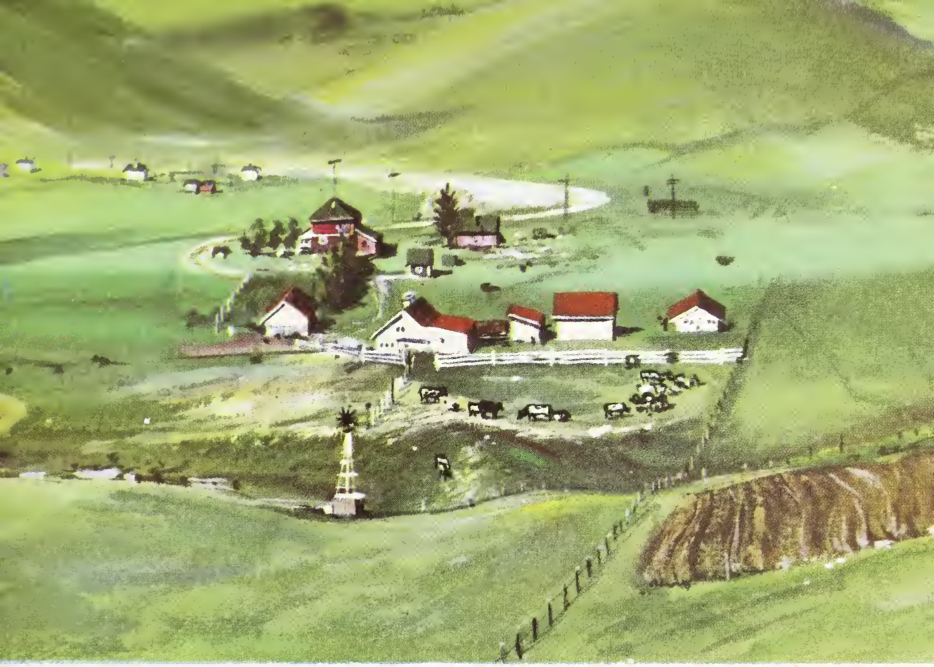
The dairy farmer does not grow as many different crops as the general farmer. Most of his money is earned by selling milk. Some of it is spent on new machinery to plant and harvest his crops. With some of it he must buy cattle feed. Often there is no wood lot on his farm. Then he must buy coal or oil to burn in his stoves or furnace. Many dairy farmers do not keep chickens, sheep or pigs. They buy eggs and meat from the nearest store.

The work of the dairy farmer is very important. The cows on his farm are living factories. In their bodies they turn corn and hay into milk. As you drink a glass of cool milk, remember that it is one of the best foods. It helps to make good teeth and bones, and strong muscles.

THE CATTLE RANCH

The dairy farmer keeps only milk cows. The general farmer has some also. But many of his cattle are beef cattle which he sells for meat. There are some very large farms in Canada where all of the cattle are raised for beef. Few pigs, sheep, or chickens are to be found there. Many of these farms are in the foothills of the Rocky Mountains in Alberta. They are called *ranches*.

Ranching is very different from farming on a general or dairy farm. In the summer the cattle are turned out to pasture. They feed on the grass which grows on the rolling foothills. In the winter they are driven in from the range. These wide grasslands stretch for miles, and often there are no fences around them. During the cold weather the cattle are kept near the ranch house. Here the rancher



A Canadian cattle ranch in the rolling foothills of the Rocky Mountains.

feeds them hay. For shelter against the cold winds and snow the cattle may go into sheds. These are open on one side.

The ranch in the picture is in Western Canada. It is in the rolling foothills of the Rocky Mountains. Far away beyond the hills are great snow-capped peaks. These are the ones which David saw on his way home to British Columbia.

Near the ranch house are the barns and cattle sheds. A windmill pumps well water for the cattle. In summer they may drink from a nearby stream or creek. Beyond the buildings are fields. In them are grown alfalfa and other hay crops to feed the cattle in winter. Barbed wire fences separate the hay fields from the range lands.

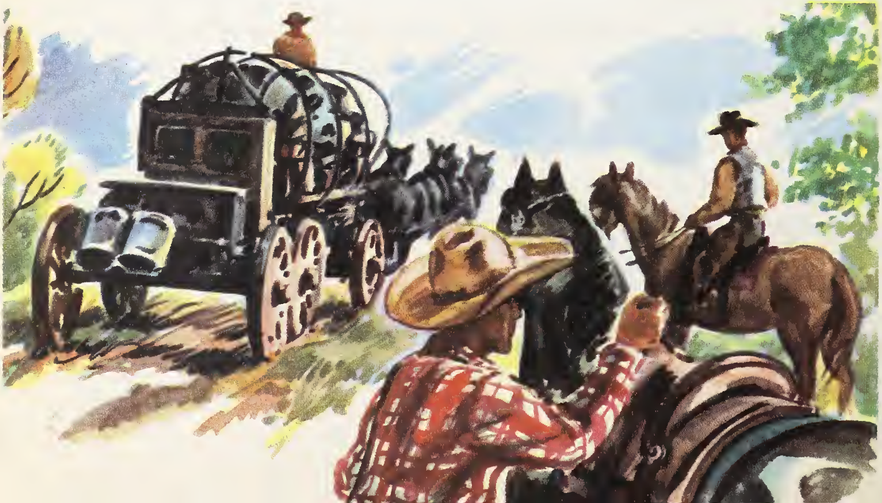
In this part of Canada there is a light rainfall. The grass is tough and does not grow thickly. It takes much land to pasture each steer. For this reason ranches are quite large and the houses far apart.

Few trees grow in the foothills. Usually the rancher plants some near his house and barns. They help to break the wind and to shelter the buildings. On clear, cool days the shining mountains may be seen many miles to the west.

Ranches in the foothills are far apart, and many are far from a school. Most of the children travel to school by bus. Their schools are much the same as those near the general farm, but the bus ride is usually much longer.

Boys and girls who live on ranches help their fathers and mothers, too. A boy may ride the range with his father to inspect and repair the fences. He may help the cowboys round up some of the cattle when it is time to ship them to

This is a chuck wagon. It was used to carry food to the cowboys on the range. There are chuck wagon races at the Calgary stampede.



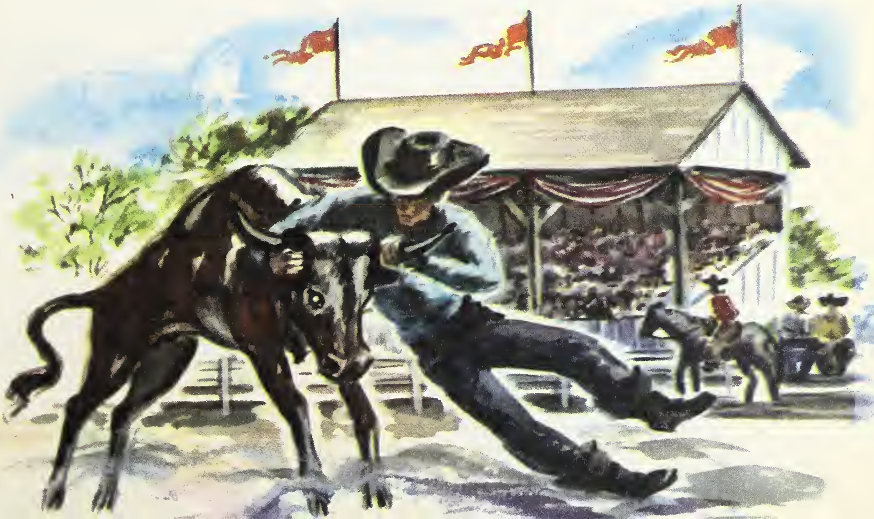
market. Every year the young cattle are branded. This is an exciting time for a boy. Then the cattle are marked with the owner's special sign. This brand is burned into the side of the animal with a hot iron. In a country where there are few fences on the range, this must be done to keep track of the animals.

The girls help their mothers to prepare meals and to care for the flower and vegetable gardens. Many ranchers keep a few dairy cows, some chickens, and perhaps a few pigs. The boys and girls help to look after them.

Ranch people have learned to enjoy themselves together. During the evening they may come to one of the homes for a party or a square-dance. Then many of them, young and old, whirl and turn to foot-tapping old-time music.

Once a year there may be a *rodeo* or *stampede* in a nearby town or city. Cowboys, ranch families, and other visitors come together for miles around. There are horse-races and

A cowboy throws a steer at a rodeo.



Cowboys at the big stampede in Calgary.

contests of all kinds. Cowboys rope cattle and calves. They try to tame wild horses and steers, and have wagon races. All the ranch people look forward to the big Stampede which is held each year in Calgary, Alberta.

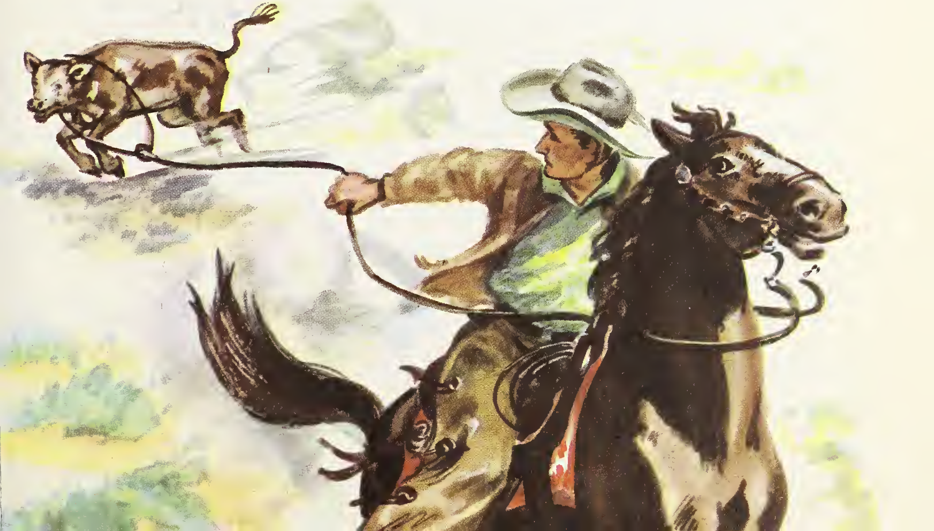
In the fall the cattle are rounded up on the range and herded to pastures near the buildings. They are not very fat because range grass is not a fattening food for cattle. Some of the steers are sold and shipped to the general farms of Ontario and Quebec to be fattened. Some may be sent directly to market. The rest will be kept during the winter and fed with hay which was grown on the ranch.

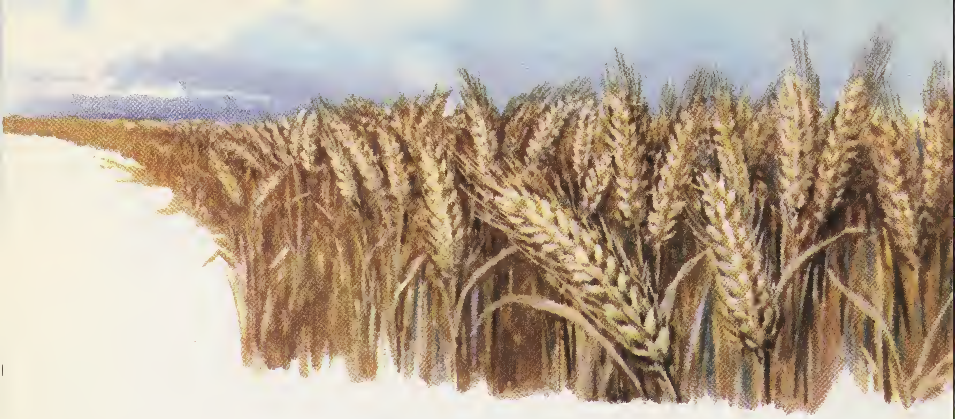
When steers are shipped east, or to a nearer market, they are herded to the railway yards. Here they are driven up a runway into cattle cars. The sides of these cars are made of slats with spaces between them. Through the openings the cattle can get fresh air. The animals are fed and watered as the fast train thunders across the continent.

You can see that living on a ranch is not an easy life. Many times in movies or television, and sometimes in pictures, you have seen cowboys. They may have been dressed in high-heeled boots, silver spurs, and fancy leather trousers and vests. Brightly coloured shirts and neckerchiefs, and great wide-brimmed hats are often worn by "dressed-up" cowboys. But the everyday working cowboy may wear blue jeans and an old faded shirt! Dressed in this way he can work just as well,—and perhaps he is more comfortable.

The next time you eat delicious beef, or buy a new pair of shoes, remember the Canadian rancher. Without his hard work we could not have this meat, or the tough leather which is made from cowhide.

A cowboy ropes a steer on the range.





THE WHEAT FARM

When David West travelled from Southport to his home in British Columbia, his train crossed the Canadian prairies. As he looked out, the great plains seemed to have no end. On and on they stretched to the far horizon. It was on these wide grasslands that great herds of buffalo once grazed. For a long time they were killed in great numbers. Now there are a very few left in parks where they are carefully protected from hunters. Instead of black herds of grazing buffalo David saw wide fields of waving wheat.

Some Canadian farmers make most of their money by raising cattle and other animals. The general farmer makes part of his living by selling wheat and other grains, but golden wheat is king to the prairie farmer. Most of his money is made from the sale of his great wheat crop. On his farm there may be a few milk cows, and some pigs and chickens. These are kept to supply food for the farmer's family.

The wheat farms are many times larger than a general or dairy farm. The yellow of the wheat fields is broken only by a few green pastures and hay fields. Here and there may be some *fallow* ground. These dark strips have been cultivated, but will not be sown for another year. There are few fences and most of these are around pastures.

Prairie farm homes may be many miles from the nearest town. The family may make a weekly visit there to buy groceries and other supplies. This trip is usually made on a Saturday. Perhaps the father will drive the family car. If he is busy the mother will take his place, with the children to help her with the shopping.

When the girls and boys are not at school, they help their parents. Work on the great farm must be done smoothly. Everyone must do his share. The boys help their father with the machinery. Some of the older children often drive the tractor that pulls the farm machinery. The girls help their mother in the house and in the garden. Gardens are harder to grow on the prairies because often the hot summer winds bring little rain. Sometimes water must be carried from the windmill to keep some of the plants alive.

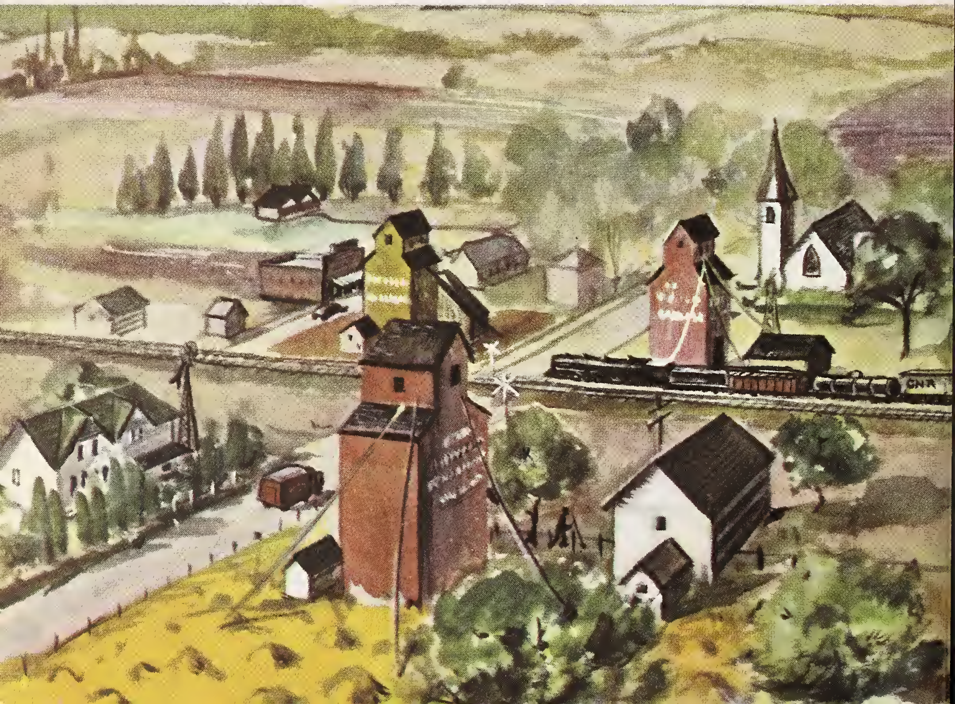
Most of the wheat grown on the general farms is fall wheat. It is planted in the autumn, but does not ripen until the next July. Fall wheat will not grow on the prairies because it is too cold there. The green shoots would surely be frozen during the winter. The wheat planted on the Canadian prairies is spring wheat.

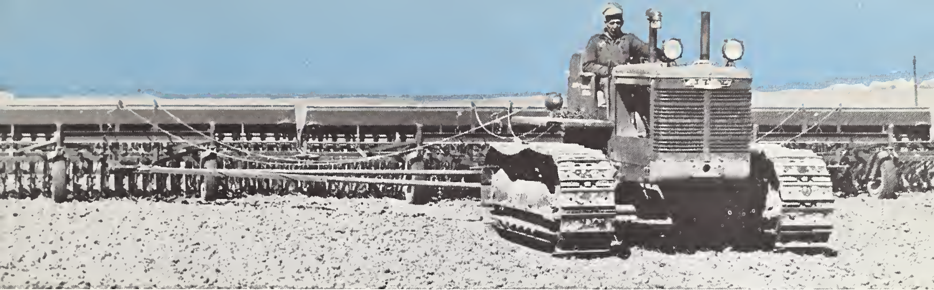
In the spring, the wheat farmer carefully watches his land. Little by little the stubble of last year's crop peeps through the melting snow. Soon the great fields of stubble are bare. The spring sun shines and the ground becomes dry. Then work on the land begins.

Giant cultivators or disc harrows are pulled over the ground by huge tractors. These machines dig the seed bed. They leave loose, rich, black soil with part of the stubble lying over it. The stubble helps to prevent the strong winds from blowing the soil away.

Only the best Canadian wheat is sown on most of the prairie farms. This wheat will resist stem and leaf rust. These are two of the diseases which may attack the growing plants and ruin the crop. The Canadian government has developed good wheat that will ripen early. From it the very best flour is made.

Elevators are found in almost every village and town on the prairies.





International Harvester.

Sowing spring grain on a big prairie farm.

When the soil is ready, large seed drills are pulled behind tractors to sow the wheat. Sometimes the seed drill and a disc harrow are joined in one machine. With it the farmer goes over the field only *once* to get the seed bed ready and to plant the wheat! This is a great time-saver.

The newly-planted wheat soon sprouts and grows. Part of the melting snows and fall rains have been stored in the soil. This moisture helps the wheat to grow very quickly. By August it is tall, and waving gently in the prairie breezes. The heads at the top of the stalks are full of golden wheat kernels.

Big fields of wheat must be harvested by big machines. Frost comes early on the prairies, so the farmer must work quickly. Usually he uses combines which are much larger than those used on general farms. These great harvesters may be pulled by tractors, or they may have their own engines to drive them. The combine cuts the wheat, takes

This machine is a swather. It can cut the wheat even after storms have knocked it down. The combine picks the wheat up later.

Massey-Harris-Ferguson

MASSEY HARRIS

the grain from the stalks and pours the kernels into bags, or into a truck which drives along beside it. With this machine a few men can harvest a huge amount of wheat in one day. Sometimes the prairie farmers keep their combines running all day and all night!

Trucks haul the wheat to the grain elevators which are found everywhere in Saskatchewan, Manitoba, and Alberta. They are tall buildings where the wheat is stored until it is shipped to market. Most of the elevators are in towns or villages. All of them are near railroad tracks. Long trains transport the golden harvest to Canada's big cities, or to ports where the ships take it to faraway countries.

Our country is one of the greatest wheat producers in the world. In our own land and in those far away, many people are grateful to the prairie farmer. Without his work it would not be possible for them to eat their daily bread.

THE FRUIT FARM

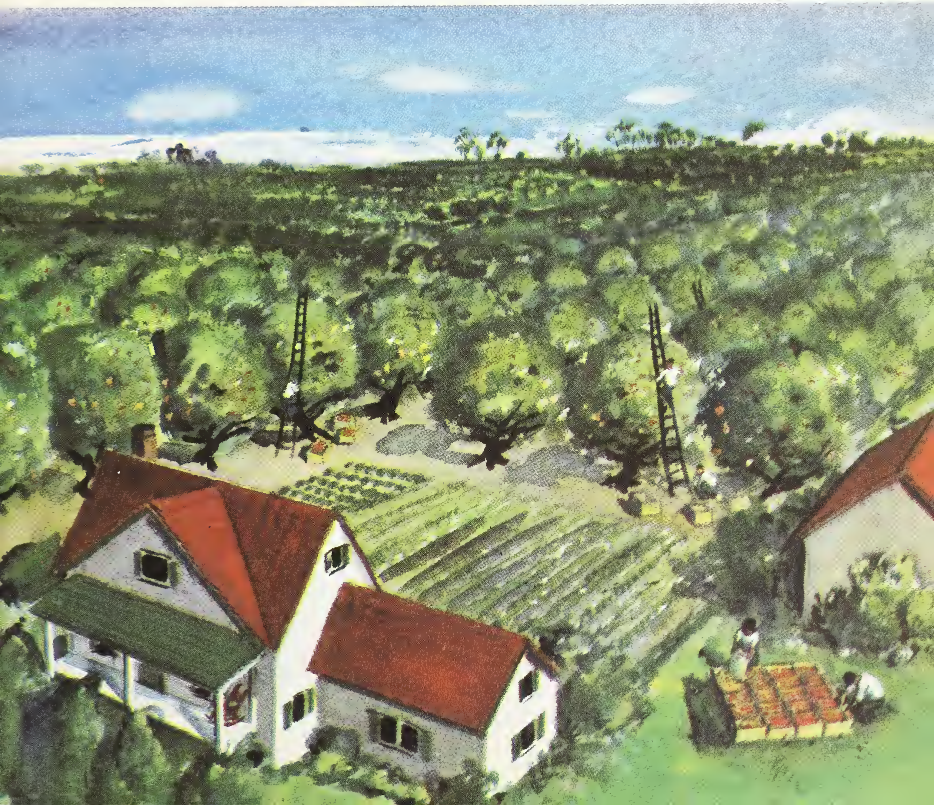
Which season do you like best? If you like harvest-time and the autumn it may be because of the fruit which floods the markets and grocery stores of Canada. Bright red apples, golden peaches, juicy pears, and purple grapes are grown in many parts of our broad land. But there are several places which are famous for fruit growing. One of these is the Niagara fruit belt in Ontario. Another is the Okanagan Valley in British Columbia. Still another is the Annapolis Valley in Nova Scotia.

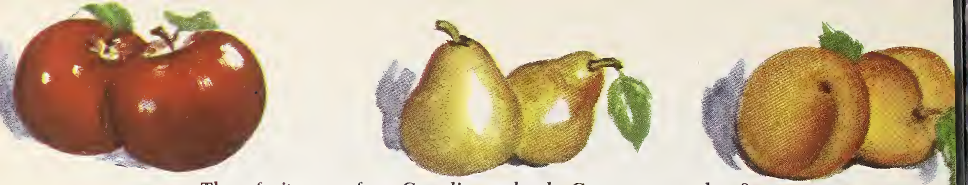
The Okanagan Valley lies between two mountain ranges where it is sheltered from cold winds. It is often called

"The Valley of Blossoms," or "Apple Valley" because there are orchards for almost a hundred miles. The soil is dry, but very rich and good. Streams from the melting glaciers in the mountains bring water to the trees. It is used to irrigate the land. Without this precious moisture the Okanagan fruit farmer would have no crop.

The Niagara fruit belt lies along the southern shore of Lake Ontario in the province of Ontario. It is sheltered by the Niagara escarpment. The soil here is also very rich. There is usually plenty of rain, and no irrigation is needed.

A fruit farm in the Niagara Peninsula.





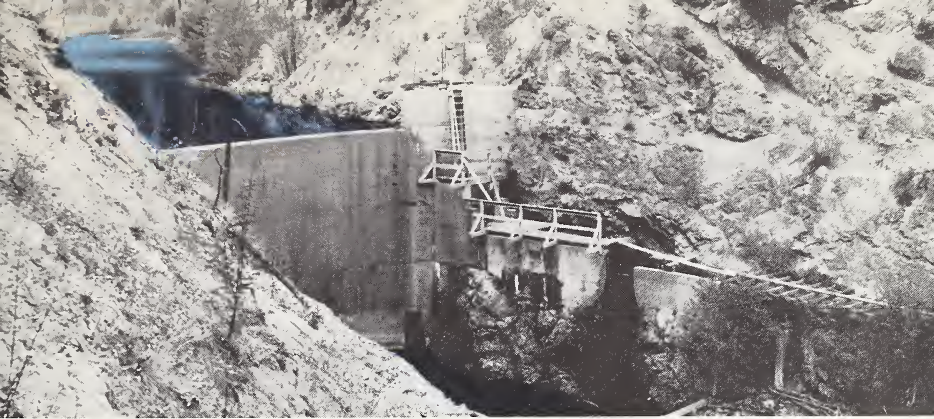
These fruits come from Canadian orchards. Can you name them?

Most of our peaches and grapes come from this part of Canada.

Spring is blossom-time on the fruit farms. There are miles of fruit trees covered with beautiful pink and white blossoms. Thousands of people come in their cars from the cities and towns to see the blossoms. Sometimes the orchards are mostly of apple trees. In other communities peach, pear, plum, or cherry trees may be grown.

The fruit farms are much smaller than general or dairy farms. For this reason they are usually very close together. Many of the children go to school in the village or town. They may live so close to school that they can walk or ride their bicycles. For those who live farther away, a school bus calls each day.

There is endless work for the children who live on a fruit farm. The farmer is busy from spring to fall and needs all the help he can get. Fruit trees have many enemies. In the spring, moths fly into the trees. Each one may lay many eggs near the blossoms. The next week the eggs hatch into tiny worms. These are so small that they can scarcely be seen. The worms bite holes in the skin of the tiny fruit and crawl inside. It does not take long for these hungry



B.C. Government Travel Burea

An irrigation dam across a mountain stream in the Okanagan Valley.

invaders to ruin the fruit. It may fall from the tree before it ripens. It will never be good for eating.

The fruit farmer fights a never-ending battle against insect pests. He uses a spraying machine to destroy the worms before they destroy the fruit. Up and down the rows he goes, spreading a fine mist over every tree. The spray is water that contains poison. When the tiny worm bites into the skin of the fruit, it eats some poison and dies.

Not all of the worms are killed. Some always escape the weapons of the fruit farmer. They sleep through the winter and lay more eggs in the spring. Spraying must be started

This valley is irrigated. Without water from the dam, fruit trees could not grow here.

B.C. Government Travel Burea

early and continued for many weeks. After such faithful care the fruit farmer hopes to have large, clean fruit of the very best quality. These are the ones that bring the highest prices in the stores.

Not all fruits ripen at the same time. In most fruit communities, June is cherry-picking time. Boys and girls help to harvest the crop. You can be sure that more than one delicious cherry goes into a mouth instead of a basket! Sometimes the father tells the young pickers to whistle as they work! The cherries are put into clean baskets and quickly shipped to the city markets.

In August the peaches and pears are ready to be picked. In September the apples and grapes are harvested.

The fruit must be picked when it has ripened. There

Picking rosy apples. The branches are pulled down by the heavy fruit.

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Sorting apples by machine.

are not always enough people living in the community. To pick the ripening fruit keeps many people busy. Strangers may come from other places to work on the fruit farms. They stay a few weeks, pick the fruit, and go home with the money the fruit grower has paid them. Sometimes older school students help to pick fruit. They find that this is a good way to earn extra spending money.

Every day for several weeks, hundreds of men and women are hard at work. Truck loads of peaches, apples, pears, plums, and grapes are taken to packing plants and canning factories. These busy places are usually in the fruit-growing community.

In the packing plants the apples are washed. Small and

PYRAMID
CANADIAN APPLES
AMID
PYF

B.C. Government Travel Bureau

Packing apples in crates. These choice apples are wrapped in paper.

spoiled fruit are carefully picked out. The good apples are packed in baskets, barrels and boxes. Sometimes the very best apples are wrapped in paper. They are then stored in refrigerated storage houses until they are shipped to market. Apples will keep all winter if they are properly stored. What is more delicious than a firm, crisp apple,—especially during the winter! Some apples are pressed to make juice. The small ones may be used to make vinegar.

Peaches, pears, cherries, grapes, and other fruits will not keep for long after they have ripened. If they are not shipped immediately to the city market, they are trucked to a canning factory. Here they are cooked and canned. Then they are sent to all parts of Canada and even to distant lands. It may not always be possible to have fresh fruit to eat. But almost every Canadian can buy canned fruit of all kinds—at any time of year. Thanks to the fruit grower the grocery man's shelves are always well filled!

There are many kinds of stores in a fruit growing area, and many factories, too. There may be factories where baskets, boxes, and barrels are made. Sometimes there are factories which make and sell fertilizers, spraying materials, and machinery.

Most fruit growing communities have a Fruit Growers' Association. This is a kind of club to which most fruit farmers belong. They work together to improve and sell their fruit. Our government helps the fruit growers. It has clever men who discover new ways to fight the enemies of the fruit trees. These men of science work hard to find better kinds of fruit.

THE FOREST COMMUNITY

A large part of our vast country is covered with trees. Many Canadians live in, or near, great forests. Many families make their living harvesting trees.

A pine forest in Northern Ontario.

Ont. Dept. Lands & Forests.

Sometimes the forest communities are very small. Each family may have a little general farm near the village or town. During the spring and summer the men and boys work on the land. They care for the cows, pigs, and poultry. In the winter the men go into the forests to cut down trees for a lumber company, or for a pulp and paper company. Then the mother and the girls and boys of the family take care of the little farm.

Men who harvest trees for a living are called *lumberjacks*. Some of them have their own woodlots. They cut trees during the winter and sell the logs to the large companies.

A lumberjack's day begins early in the morning. He may work many miles away in the woods. The weather is cold and the ground is covered with snow. He has a cap with flaps to cover his ears. He also wears a thick coat, warm mitts, thick woollen socks, and high boots.

When the lumberjacks are working far from their homes, they live in cabins. These may be built of logs, and have bunks along the walls where the men sleep. A larger cabin is used for cooking and eating. A group of cabins among the trees is called a lumber camp.

The lumberjack's winter camp.

Ont. Dept. Lands & Forests.

The nights in the forests are long. The men gather in one of the cabins to play and sing together during the long, dark evenings. Often they tell stories of great deeds done by famous lumberjacks.

On some parts of our western sea coast the forests are often hard to reach. This is because there are many high mountains and few roads. The easiest way to get to the giant trees is by boat. Lumberjacks cut down trees along the shores of the bays and inlets. Instead of log cabins, the men build houses on huge rafts. The lumberjack's family lives with him in this floating house. When all of the trees have been cut at one place, the house is towed by boat to another.

Some of the lumberjacks cut down trees with saws. When the tree has fallen they chop off the branches with sharp axes. Usually the big logs go to the saw mill to be

Sawing a log into smaller pieces.

Ont. Dept. Lands & Forests.

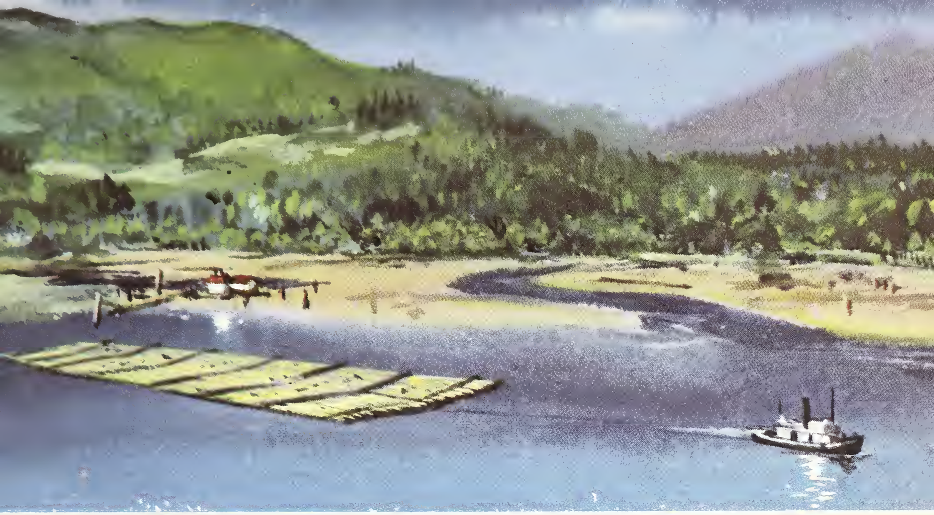
sawn into lumber. The smaller ones are taken to a pulp mill. After the trees have been cut into logs, men driving tractors or horses and sleighs, drag the logs away. They slide easily over the snow, as your sleigh does. All through the winter the logs are placed on the bank of a river, a lake, or even the sea. Sometimes they are piled up on the ice in thousands.

In the spring the snow melts and the river rises high between its banks. The thick ice breaks up and floats away with the swift current. The logs on the bank are rolled into the rushing waters. The river seems to be a solid mass of logs from bank to bank. Those which were piled on the ice get a head start in the race to the saw mill or to the pulp mill.

Sometimes logs get stuck on rocks. Then many other logs pile up behind them and there is a jam. Nimble-footed lumberjacks with long poles skip from log to log as they try to loosen the jam. It is very hard to keep their footing on the slippery, rolling logs. To help them their boots are studded with nails. Sometimes the jam cannot be cleared

Logs fill a small river from bank to bank.

Ont. Dept. Lands & Forests.



Towing a boom into Vancouver harbour.

by hand. Then it may be blown up with dynamite!

So that the logs will not float past the mill, they are often made into *booms*. These are made by bringing many logs tightly together. They are held closely packed by outer *boom-sticks*. These guard logs are chained together and fastened around the boom.

When logs are rolled into a lake, or into the sea, they are often made into a boom immediately. In large bodies of water the current is not strong. The great booms are towed by boat to the sawmill or pulp mill. Some of the ocean booms are like huge wooden icebergs. The greater part of the boom is under water. Slowly the powerful tugs pull the tightly chained forest giants to the mills down the coast.

At the sawmill, a long belt-like machine drags a log from the water and into the mill. Another machine moves it

Ont. Dept. Lands & F

Machinery lifts the logs from the river to the sawmill.

against a whirling saw. The spinning teeth go through the wood with a whining roar. A big piece is cut from the log. It may be a long outer slice with much bark on it. This is a slab. Or it may be a board, which is one of the inner slices. Slabs are cut up into smaller pieces and become firewood. The boards are sold as lumber. Great piles of spruce, pine, fir, birch, and maple grow beside the sawmills.

Later the lumber is placed on trucks or railway cars and transported to the lumber yards of Canadian towns and cities. Some lumber is loaded into big ships and carried to markets in many distant parts of the world.

In all of the forest areas of Canada there are giant pulp and paper mills. Many of these are near the mouths of rivers. Others may be on the shores of ocean inlets.

Loading logs into a lake boat. They will be taken to a pulp mill.

Ont. Dept. Lands & F

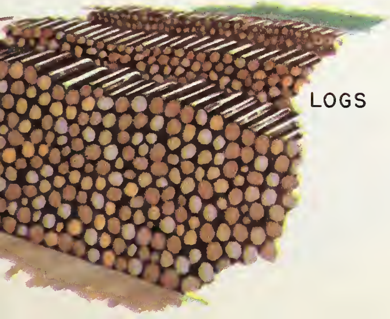
Ont. Dept. Lands & Forests.

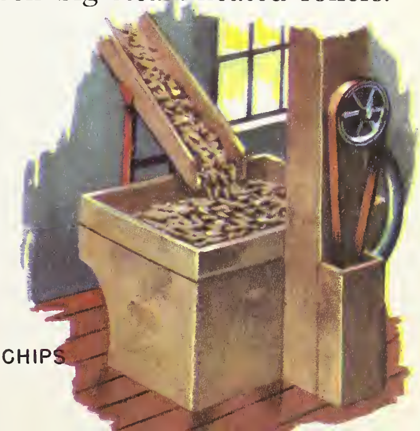
A Canadian pulp mill with its huge piles of logs.

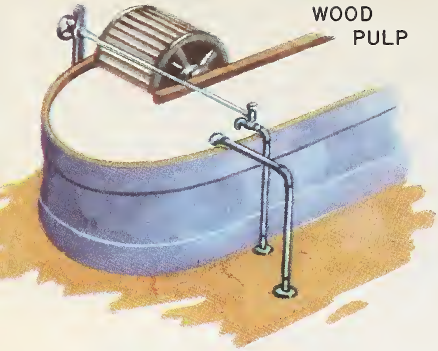
The booms are brought to the pulp mill, where they are lifted by machinery from the water. Then they are dropped in huge piles. When they are needed they are carried into the pulp mill.

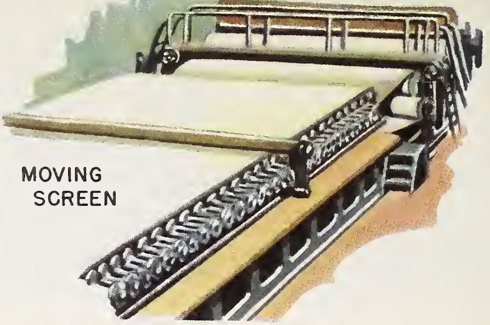
Here the bark is removed by shaking many logs together. As they roll, one against the other, the bark is loosened. Streams of water help to remove it and wash away the broken pieces. The logs are then washed clean and ground into very small chips by very powerful machines. The chips are cooked with very strong liquid called an acid. After a twelve hour cooking the wood has changed into a mass of soft stringy pulp. The pulp is cleaned and bleached until it is snowy white.

The pulp is used to make paper. In the paper mill it is dropped on a moving screen. The pulp sticks together until the layer passes between big steam-heated rollers.

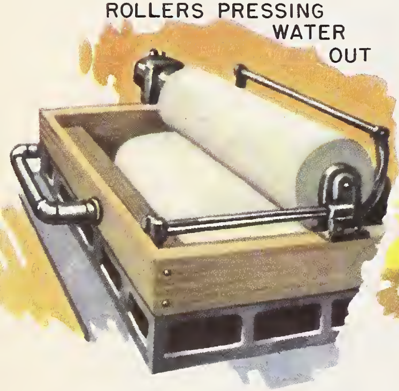


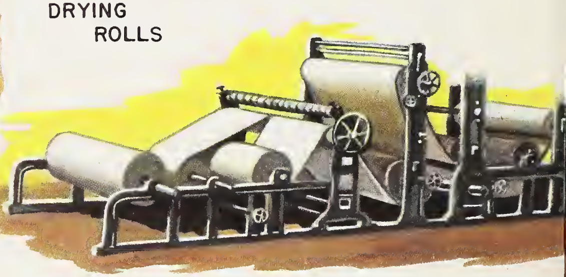




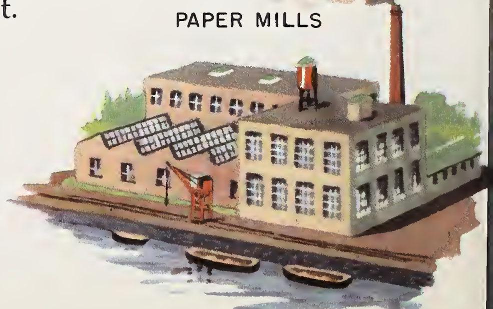

MOVING
SCREEN

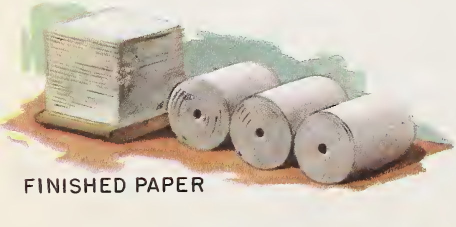
The water is driven off and the dry pulp is matted into endless sheets of paper. A substance called sizing is sprayed on it to make the surface smooth. The paper in this book was made from a Canadian forest tree.


ROLLERS PRESSING
WATER
OUT


DRYING
ROLLS

Not all of the saw mills and pulp and paper mills of Canada are in the forest communities. Sometimes they are in big towns, or even in cities. Logs are brought to these mills by truck, rail, and boat.


PAPER MILLS


FINISHED PAPER

The worst enemy of the forest community is fire. A forest fire kills everything in its flaming path. It may destroy the wild animals of the forest and all of the trees. The leaf covered ground is scorched and baked. The land is left bare and dead for many years. After a time small trees do grow among the blackened stumps. But many years pass before they are big enough to cut.

When a forest is destroyed by fire there are no trees to be cut. There is no work for the forest workers. They and their families may have to move to another part of the country. The saw and pulp mills may have to close down because there are no logs. Hundreds of men then have no way of making a living.

In many parts of our forest lands men and boys are busy every summer day. Some are keeping a close watch for fires. Others are fighting the crackling, roaring flames when they are found. From high wooden or steel towers sharp-eyed fire watchers guard the dry forests. Airplanes are often used in fire-watching and fire-fighting.

Most forest fires are caused by carelessness. People who go hunting, fishing, or camping are often the careless ones. They forget to soak their campfires with water before leaving them. Some throw lighted matches or cigarette ends from car windows. Others drop them beside the forest paths. Surely they would not be so careless if they understood the great damage they were doing. Canada's forest wealth is very great. But it is not so great that Canadians can let it be wasted.

Drying cod fish at St. John's, Newfoundland.

THE FISHING COMMUNITY

Canada is a land of thousands of fresh water lakes. It has thousands of miles of salt water sea coast. Along the lakeshore and seacoast there are many communities where the people make their living mainly by fishing.

To many of these communities there are no roads or railways. They can be reached only by boat. Some of the smallest villages have a few families only. They may have a small school about the same size as the rural school near the general farm. Other fishing communities may be large towns, or even cities. In these there may be several big schools.

Usually the children do not live far from their school. Perhaps the village is at the end of an inlet. Or it may be on the sheltered shore of a cove. The school and the church are the centre of the community. The houses of the fishermen are close by. Sometimes a family may have a small farm. On it will be kept a cow for fresh milk, some sheep, pigs, and chickens. The boys and girls often help their mother to care for the farm when the father is at sea.

Nearly every family in the village owns at least one boat. The boys may have their own small boats. They use them to do some fishing near the shore while their fathers are away. Many of the boys want to become fishermen when they grow up. And so they must learn all about boats, fish, and the sea when they are young.

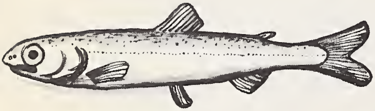
Fishing is no work for a weakling. Often the weather is stormy. Cold winds roar and icy waves crash over the decks. Every year boats are lost and some fishermen are drowned. At other times the sea is calm and the weather may be warm. Then the fisherman must work twice as hard to make up for lost time.

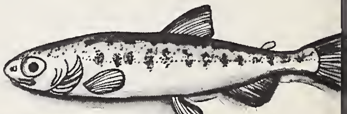
Most Canadian fishing villages are small. The families know and help one another. There is a fine community feeling, or spirit, and the people work and play well together.

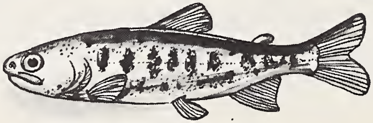
Our country is so large that there are many kinds of fishing communities. The people catch many kinds of fish. Those caught in the lakes and rivers are called fresh water fish. They are sent to market fresh or frozen. On the sea coasts lobsters, oysters, clams, and other shell-fish are caught. Two of Canada's most important fish are the salmon and the cod. The salmon is caught mainly off the western coast of Canada. The cod is taken from the waters of the Atlantic Ocean near our eastern coast. No matter what kind of fish they catch, the fishing families live by the silver harvest of the lakes and the sea.

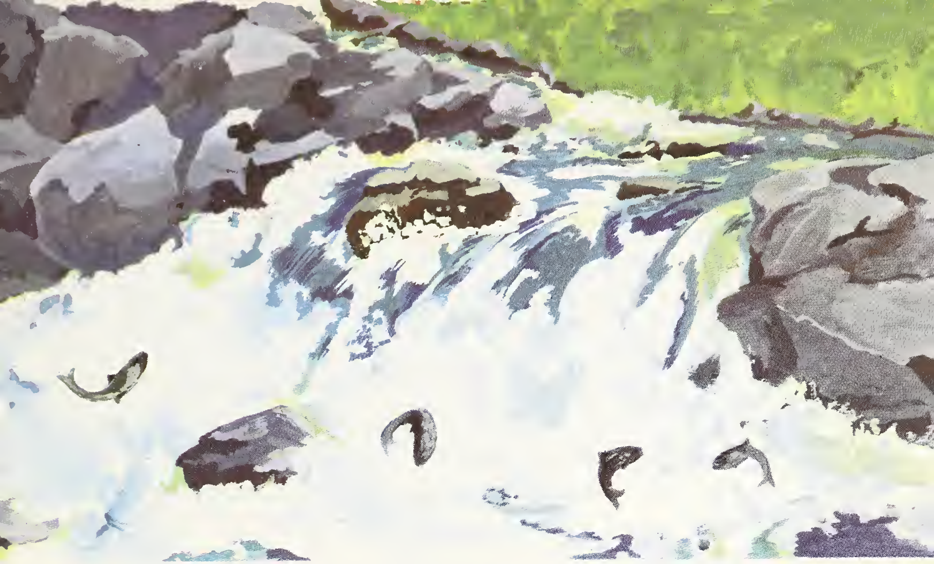
Salmon Fishing on the West Coast

The salmon is a most interesting fish. The female lives most of her life in the ocean off the coast of British Columbia. She always returns to spawn, or lay her eggs, in the fresh water of the mountain rivers and streams. In spring, schools of fat salmon move to the shore with the ocean tides. They are carried into the mouth of a river. Then they begin to swim up the river toward its source. All summer long the salmon leave the salty ocean for the


PINK SALMON


SOCKEYE SALMON


COHOE SALMON

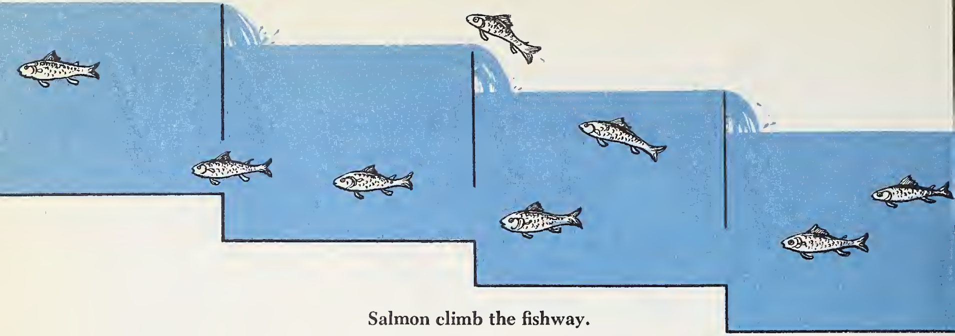


Salmon leap into the air as they try to climb a mountain waterfall.

clear mountain streams. The fish swim near the top and often leap above the water.

Soon the salmon reach one of the many rapids of the mountain rivers. Then they swim close to the banks. Here the current is not as fast, and it is easier for the fish to make their way by swimming or leaping ahead. Sometimes the rapids are so steep they are almost waterfalls. Then many of the salmon cannot reach the spawning grounds. To-day men have built *fishways* at many of the steep rapids. Fishways are like ladders of water. They let the fish climb up stream a little at a time.

The sockeye salmon comes to the rivers to spawn early in the spring. It swims far inland to the little lakes which feed the rivers. Salmon which come during the summer or early fall, swim to lakes nearer the mouth of the river. These fish swim only up tributaries which lead to lakes.



Salmon climb the fishway.

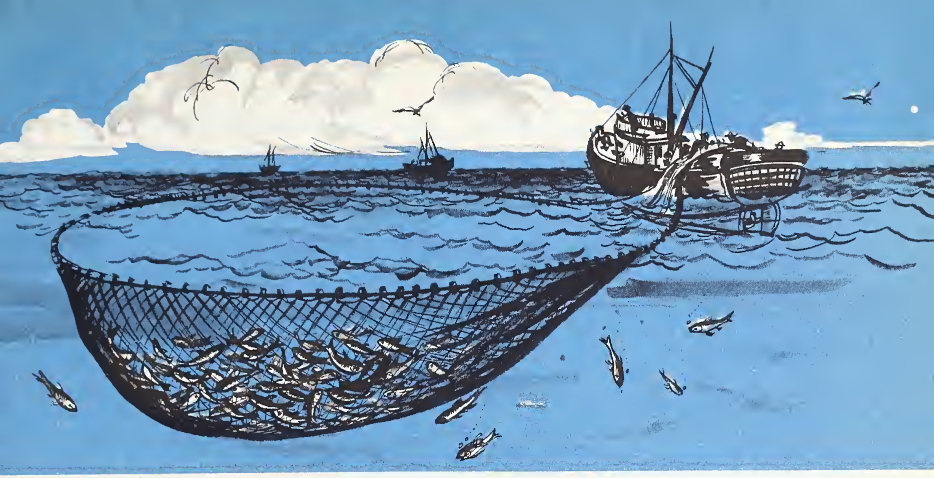
Some kinds of salmon spawn only in the streams near their sources. Others lay their eggs near the river mouths.

After they have laid their eggs, the grown-up salmon die. They have eaten no food since leaving the ocean, and live only a week or two after spawning. Their worn-out bodies sink to the bed of the stream.

What happens to the millions of salmon eggs? After a time they hatch in the cold, clear water. They are about the size of a small piece of match stick. Then they begin to make their way downstream toward salt water. Many of the little fish are eaten by hungry river fish, or by birds.

Months later those that are left reach the sea. By this time they may be as big as your finger. In a few years they have become as long as your arm. Their strong, firm bodies are beautiful to see. The full grown fish join a big school of salmon. In some amazing way they find their way up the river in which they were born.

Salmon are easy to catch. They may be taken in the river mouths or inlets. Fishermen use nets made of linen cord to catch them. The fish try to swim through the nets but their gills become caught. The fishermen haul the gill nets into their boats and remove the fish.



A purse net for catching salmon.

Some fishermen, in large boats, go out to where the schools have gathered. They let down into the water a big net shaped like a purse. It can be pulled shut by ropes. The net is drawn among the fish, and closed. Then it is raised and the trapped fish are emptied into the boat.

When the catch has been made, the boats take the fish to the cannery. There are more than thirty of these factories on our Pacific coast. Machinery carries the salmon from the boats to big bins in the building. They are placed in what is called an *iron chink*. This amazing machine takes off the head, tail, fins, and scales—and then cleans the fish all at once!

Other machines cut the fish into crosswise pieces and feed it into cans. In some factories the cans are still packed by hand. The filled cans are salted, cooked, and sealed. Later they are shipped to the markets of Canada. Our salmon is well known all over the world.

Cod fishing boats on Canada's east coast.

Cod Fishing on the East Coast

Cod are caught almost everywhere along the Atlantic Coast of Canada. Most of them are caught in nets from small boats, or *dories.* The fishermen are out from June to October. Most of the fish are brought in during June and July. This way of taking the cod is called inshore fishing. It is done in the thousands of inlets and coves along our rocky east coast. You will remember that the twins saw many of these from the airplane on their way home.

Inshore fishing is work for a family. The men go out in their dories and catch the fish. The women and children clean the fish which are then dried in the sun. Often the men will fish all day with out catching anything. On other days the fishing is good and the dory is soon filled.

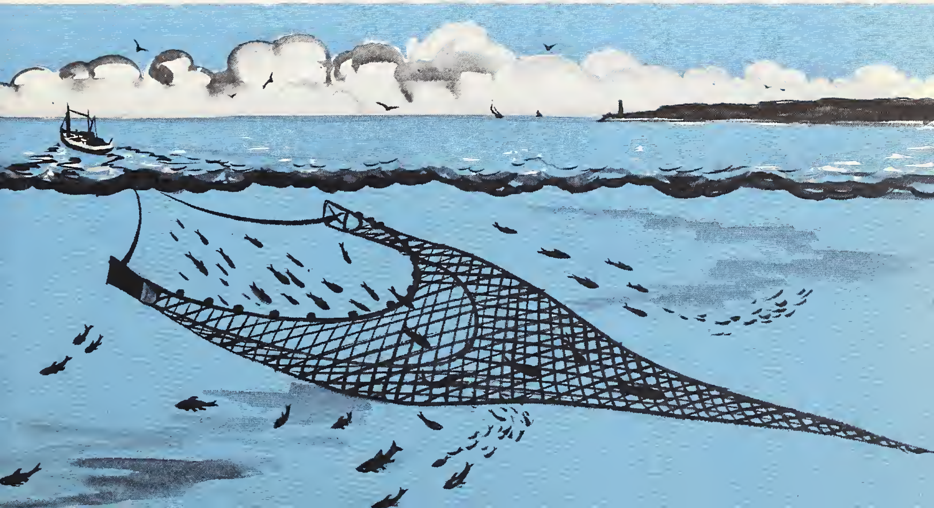
The fish swim in schools. They like to stay in water which stays at the same temperature. Often the temperature of the water in a bay or inlet changes. Then the cod may not swim in to the sheltered water. If the fisherman is working there he may come home with an empty boat.

The Grand Banks of Newfoundland are Canada's oldest fishing grounds. The Banks were formed by a shallow underwater shelf of land. It is a very good place for the cod to feed on sea weed and smaller fish. They also come to the Banks to spawn. For hundreds of years fishermen from Europe, Canada, and the United States have taken the cod from these rich fishing grounds.

On the banks fish are caught with hooks and lines. The hooks are baited with small fish. *Trawlers* fish here also. They are ships which drag heavy *trawls*, or nets, along the sea bed to scoop up the fish.

The Grand Banks fishermen use larger boats than the dories of the men who work near the shore. Often they are

A trawl net for catching cod fish on the Grand Banks.

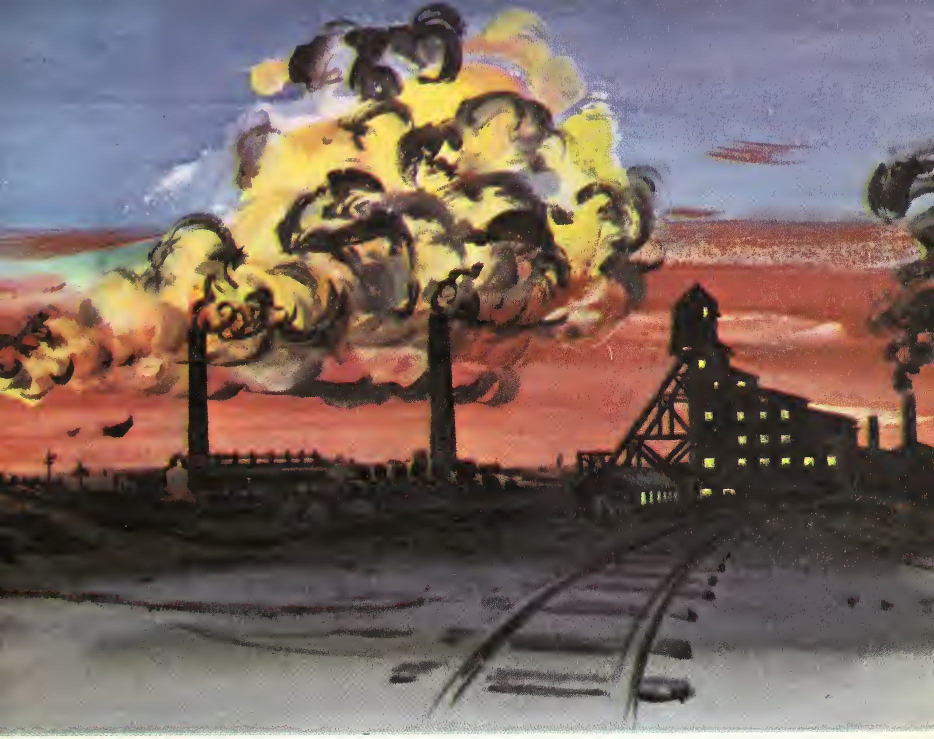


away from home for several days or weeks at a time. The ships carry chopped ice to keep the fish fresh until they return to port. Plenty of food and other fishing supplies are always needed. They may have to return to harbour to get more bait-fish or ice. Best of all, they like to sail home with a full catch.

The cod must be cleaned as soon as possible. Men, women, and children use sharp knives to cut off the heads. Then they split the fish open, clean it and salt it. The fish is now placed in the sun to dry. The flesh of dried cod is very hard, and easy to keep. It does not need refrigerators to keep it from spoiling. The dried cod is packed and shipped to many distant parts of the world.

Some cod are taken to modern fish plants owned by the fishermen. Instead of being dried they are made into fillets and frozen while they are fresh. Fillets are two pieces of flesh without bones, which are cut from each fish. A four pound cod will make only one pound of fillets. The rest of the fish is used to make fish meal. It is fed to chickens and pigs. Have you ever taken cod-liver oil? It is made from the liver of this fine fish.

By now you will know a little about the way the Canadian fisherman makes his living. He must sell his catch at fair prices. His daily work is often uncomfortable and dangerous. He must be patient and hard working. Every Canadian should help him by eating delicious and healthful fish often.



THE MINING COMMUNITY

On its way to British Columbia, David West's train passed through Sudbury. It is a busy city in Northern Ontario. More than forty thousand people live there. The city is surrounded by rugged rocks and clear lakes. Much of the rocky country is bare. There are no general farms or orchards near the city. There are no ranches or wheat farms. Why do so many people live in this place? What do they do for a living?

The people of Sudbury make their living from a metal called nickel. It is hidden in the rocky hills around the city.

In Part III you have read of the great railways across our country. Many years ago one of these was being built in Northern Ontario. One day the workmen were blowing up rock to make a road bed. They uncovered some rock with a strange shining metal in it. Rock which has a metal in it is called *ore*. The ore which the railroad builders uncovered had nickel in it.

Soon prospectors hurried to this wild country. Their search was for more valuable nickel ore. When they found it, other men came to help take it from the ground. They brought their families with them and built homes. Grocery stores, butcher shops, clothing, and many other stores sprang up. Churches and schools were built. A city began to grow where once there were only rocks and lakes. The miners who take the ore from the ground caused all this to happen.

Within ten miles of the city there are several nickel mines. Most of the mines are underground. Wide, new highways pass from the city, through low rocky hills, to some of the mines.

In the morning the men leave their homes in the city. They travel by car or bus down the highway to the mine. In the distance there are several tall buildings. They look something like the grain elevators on the prairies. The men stop at these buildings and go inside. This is the place where the miners enter the mine. Here there is a large hole in the floor of the building. It goes down into the ground and is called the *mine shaft*.

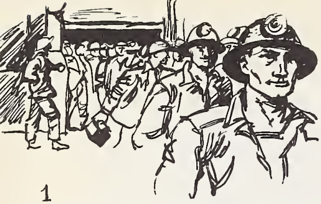
The shaft is a passage to let the miners in and out of the mine. It is also used to bring up the ore from below. In the tall building there is a hoist which raises and lowers loads of men and ore.

When it is time to begin work the miner gets his coveralls, helmet, and miner's lamp. A cage, or elevator, is waiting for the men at the top of the shaft. They enter, the doors are shut, and down drops the cage. It is very much like the elevators you have used in a large city store. In the store elevator you usually start at the bottom and ride up. In the mine cage the miners start at the top and ride down!

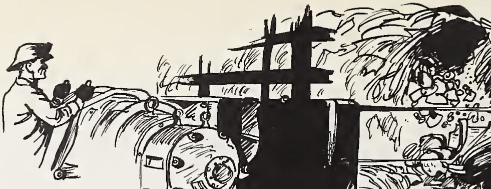
When the cage has been let down by the hoist for several thousand feet, it stops. The door opens and the men step into a room cut out of the solid rock! They do not need to use their lamps because the room has electric lights.

Long tunnels run out from the room. In each tunnel there is a narrow railway track. Some men enter each tunnel and walk for half a mile or more, to side tunnels. This is where the ore is dug. Big electric fans push fresh breezes along the tunnels. The air in a mine must always be kept fresh.

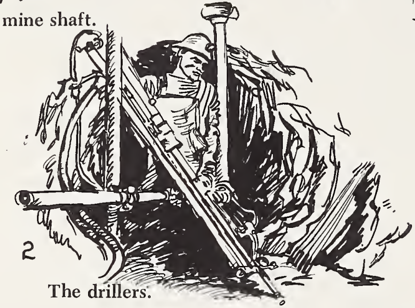
There is no electricity at the end of the tunnels. Here the miners turn on their lamps. The rock all around them glitters with shining metal. Using long, powerful drills, the miners make holes in the rock. Blasting powder is put into the holes to break the rock walls into small pieces. When all the holes have been drilled the miners leave the



1
The entrance to the mine shaft.



3 The scraper.



2
The drillers.

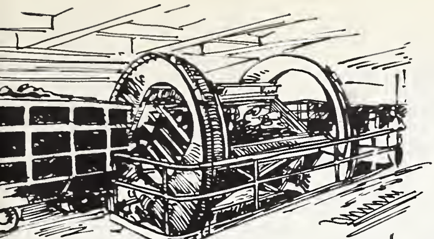
tunnel. With a roar the powder goes off.

The explosion crumbles the rock walls. Big steel *scrapers* gather up chunks of ore. They are loaded into long trains which run through the tunnels. The car loads of ore are dropped into a *crusher* which breaks up the larger lumps. The crushed ore is carried by machinery to the bottom of a shaft.

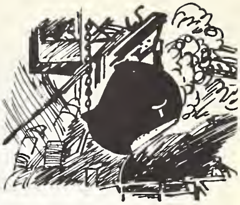
Powerful mine hoists lift the crushed ore to the ground level with steel ropes. It is then taken to a nearby *smelter*. In this place the nickel is taken from the ore.

First the ore is crushed again until it is a powder as fine as flour. The powdered metals are then separated from the powdered rock. Besides nickel, copper and other minerals are found in the ore.

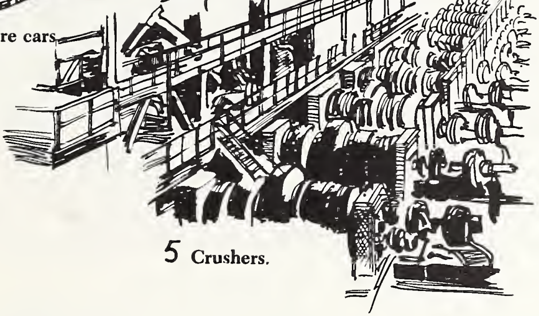
The nickel is then roasted in the great furnaces, or smelters. Smelting takes out sulphur and other substances, and leaves almost pure nickel.



4 Unloading ore cars.



6 The smelter.



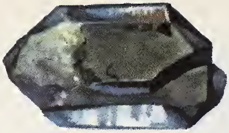
5 Crushers.

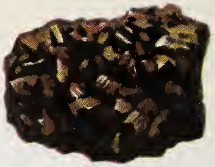
But it is not pure enough yet. To make it so, the metal from the smelter is sent to a factory in another Canadian city. Here is a great *refinery* where much cheap electricity can be used. The electricity is put to work in a wonderful way to take out the last small parts of other substances. What is left is pure nickel.

Our country produces most of the nickel used in the world. This shiny metal from Canada is sent to many other countries. It is used on stoves, toasters, and water taps. It is found on cars, trains, and airplanes.

Not all of the people in the mining community make their living by mining. There are storekeepers, doctors, teachers, and many others who are needed in a community. But most of the people depend on the money earned by the miners.

IRON ORE


QUARTZ

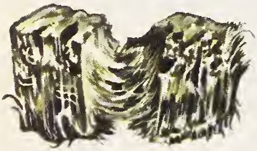

COPPER ORE

These ores are mined in Canada. Find out what is made from each one.

There are many mining communities in Canada where other minerals are found. Across our land there are silver, gold, copper, lead, and uranium mines. On the east coast are coal and iron mines which go down under the ocean bed. Some of our biggest iron and gold mines are being found in the northern parts of Canada. Some day there will be busy mining communities there also.

Many of the people who work in our mining communities are new Canadians. These people were not born in this country, but came here from across the ocean to make a new life. They felt it would be a better place for them and their children to live. Often they have their own churches. They still speak their old languages. But they are learning English and all of them wish to be Canadians.

Boys and girls of these families go to Canadian schools. They play with children of older Canadian families. They like the same games, go to the same movies, and learn to be good Canadians together. Their fathers and mothers are helping to build the great new cities and towns which are growing up in our new mining communities.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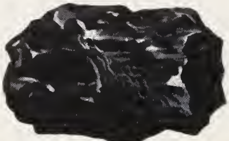
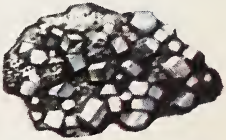
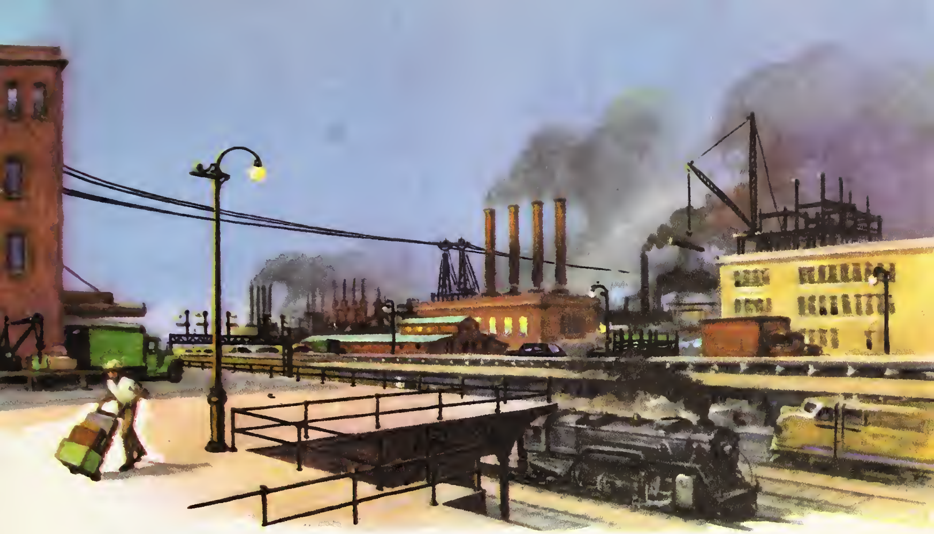

COAL


SALT



THE SMALL MANUFACTURING CITY

Most of Canada's cities are small. In many ways they are very much alike. Perhaps you live in a large town or small city. If you live in the country near one of these you may know it very well. As you read this section compare the one you are reading about with the one you know.

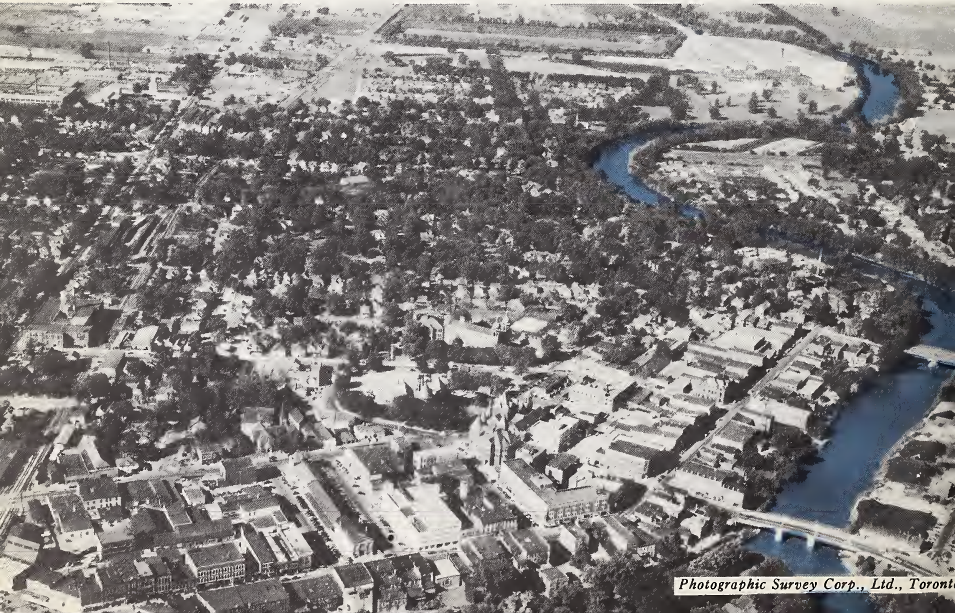
Most cities have grown up near water. Some are on rivers, others are near lakes. In Canada's early days there were no roads or railways. The first settlers came by the waterways to the places where the cities began. To-day many of the rivers are too small for big boats. Others are wide and deep enough to be good harbours. It is good for a city to be near a bay or inlet which makes a wide, sheltered port.

Usually there is a post office near the centre of the small city. Not far from the post office is the city hall. These buildings are on one of the main streets. Sometimes a city has only one long main street. Others have two which cross each other. The post office may be on one corner of the crossing, and the city hall on another. Is this like the city you know?

Most of the stores, banks, hotels and movie-houses are on a main street. They are built near the centre of the city so that they can be quite close to all of the homes. If the city has a farmers' market, it will most likely be on one of the main streets, too. Most of the city people come to this business section to buy the things they need.

Many side streets run out from the business section. On these streets factories, schools, and houses are built. There are factories near the centre of the city, too. These are the ones that were built many years ago. Many of the newer factories are built near the edge of the city. There are

This is Chatham, Ontario. It is a small manufacturing city.



Photographic Survey Corp., Ltd., Toront several schools. Each one is in a different part, so that the children will not have far to walk to school.

Near the centre of the city the houses are built very close together. Some of them may be almost touching the ones next door. Away from the crowded part, and nearer the edge of the city, the houses are farther apart. They have fresh green lawns, and large gardens behind them.

Then comes the edge of the city. Often this is only a short walk from the business section. The houses do not always stop suddenly. They may be built on both sides of the roads which lead out from the centre of the city. Behind them is the open country. Here and there are dairy farms, fruit farms, and gardens which supply food to the city stores and markets.

Many city families buy some of their food at a farmers' market. The farmers who live nearby bring their vegetables, meat, and eggs to sell to the city people. Each farmer rents a space or stall in the market. He puts out the things he has to sell and many people come to buy. Usually there are two market days each week. On these days hundreds of housewives with their baskets come to shop. They like to buy food fresh from the farms.

The farmers' market at Welland, Ontario.

Already you have read how the farmers, the miners, and the fishermen work in their different ways. They supply food and other materials to the people who live in the city. Then how do the families who live in the small city earn a living?

Most of the men who live in the manufacturing city work in factories. They make many things which the farmer, fisherman, miner, and lumberjack buy. There are usually several factories, but one may be larger than the rest.

Perhaps the biggest factory makes farm machinery. Each morning its whistle will blow to warn the men that work begins in half an hour. The workers come from all parts of the city, some on foot, some on bicycles, some in buses, and some by car. There may be workers from the nearby country-side also. Many carry lunch boxes.

At the beginning of their day at the factory they punch a time clock to show that they have started to work. They do this again when they leave to go home. The time clock is a machine which tells the factory owners how long each man has worked. Then they can find out how much pay he should get. This is done in a part of the factory called the office. Here there are many desks, typewriters, and adding machines. The men and women who work here keep records of all the work that is done in the factory.

Each worker goes to his own job. Some men work in a shop cutting the metal to make the farm machinery. Other men operate great machines with the strength of two hundred men. With these the worker can cut steel by pressing a button! Some men work in assembly shops where the machinery parts are put together.

Some of the machines run quietly. Others make so much noise that you cannot hear a person talk. Always there is an endless coming and going. The factory is a busy, humming place.

There may be several other factories in the city. One makes shirts from cloth. Another makes leather from western cowhides, and still another makes shoes from the leather. Here is a very interesting one! It takes potatoes from the farmer and makes potato chips. Carloads of meat from the farmers or ranchers come to a factory that makes hams, sausage, and wieners. Do you recognize any of these as you think about the city you know best?

All the things used in the factories are bought from other people. They may come from the paper company, the fisherman, the mining company, or the farmer. These things are called *raw materials*. The factory workers make the raw materials into useful things, or *products*. These products are sold back to the fisherman, lumberjack, miner, and farmer. In this way the owners of the factories get the money to pay their workers.

The factory workers are paid once a week. On pay day, hundreds of people go home with the money they have earned. They use it to buy food and clothing from the stores. They use it to pay rent, to help buy their homes, or to pay taxes. They use it to buy coal or oil for heating their houses. Not all of the people who live in this city make their living by working in factories. But nearly all of the money comes from the wages paid to the factory worker.

There are one or two railway stations in each Canadian manufacturing city. Either the Canadian National or the Canadian Pacific Railway brings raw materials or people by train. Sometimes both great systems run through the city. The trains also take the products which the factories make to distant markets. People come to sell raw materials to the factory owners. Other people come to buy farm machinery and other manufactured goods. Long trains loaded with bricks, lumber, coal, and steel roll into the freight yards. When they leave the city the locomotives are pulling the products made by the skill of the factory workers.

Of course you understand that not all Canadian cities are the same. As you grow older you will travel to more places. As you go, watch carefully to see how other Canadians, on farm and in city, work to make a living.

In this part you have read about many different communities. Every one of them produces food, raw materials, or factory goods. Products of the farms, forests, oceans, and mines find their way to the manufacturing city. Things made in the city find their way to every community in Canada. No matter where men live, they depend on one another. If each Canadian does his own job well, he helps to make his country a better place to live.

A factory in Cornwall, Ontario.

Photographic Survey Corp., Ltd., Toronto.

These young Canadians live on the shores of Hudson Bay.

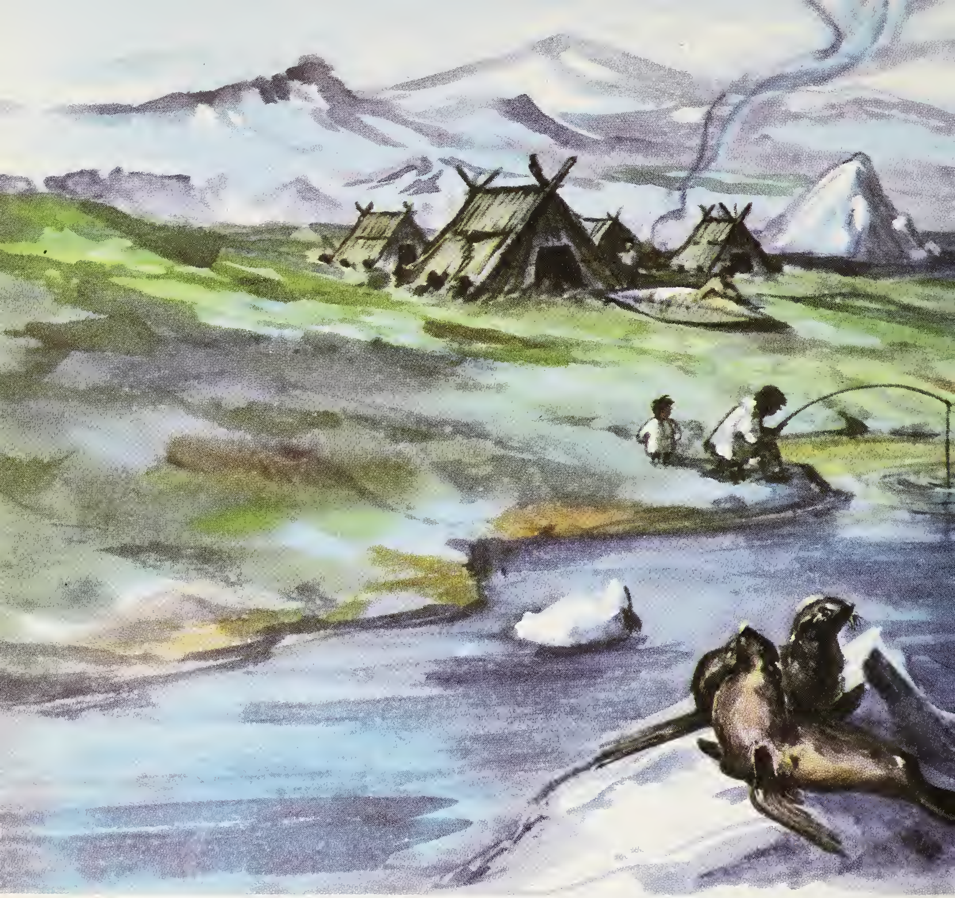
PART VI

TO OTHER LANDS

In the first part of this book you began to learn about the globe and maps. You have read how Transportation and Communication began, and grew up. You have made short visits to other parts of Canada. By this time you know how other Canadians live.

Now you will be eager to go to other lands, to meet other people. The first story in this Part is about interesting people who live far away in Canada. The others, which follow it, are about people in other countries.

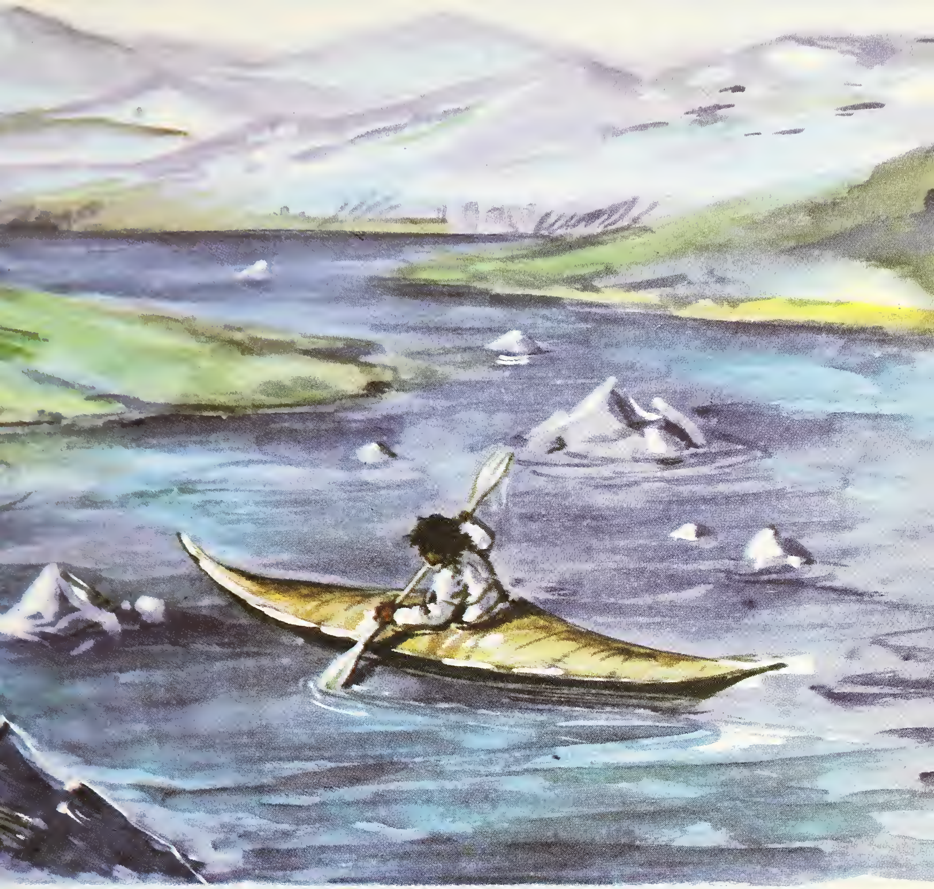
Don't forget to keep your eyes open. See how their ways are like your own. Notice how they are different, and try to find out *why* they are not the same. Now—are you ready to travel?



Here is the summer home of an Eskimo family.

LIVING IN NORTHERN LANDS

Do you remember the part of the globe which stretches from the North Pole to the Arctic Circle? It is called the Arctic Cold Cap. The Arctic Circle stretches across the northern part of Europe and Asia. The land near the Arctic Circle is very cold during most of the year.

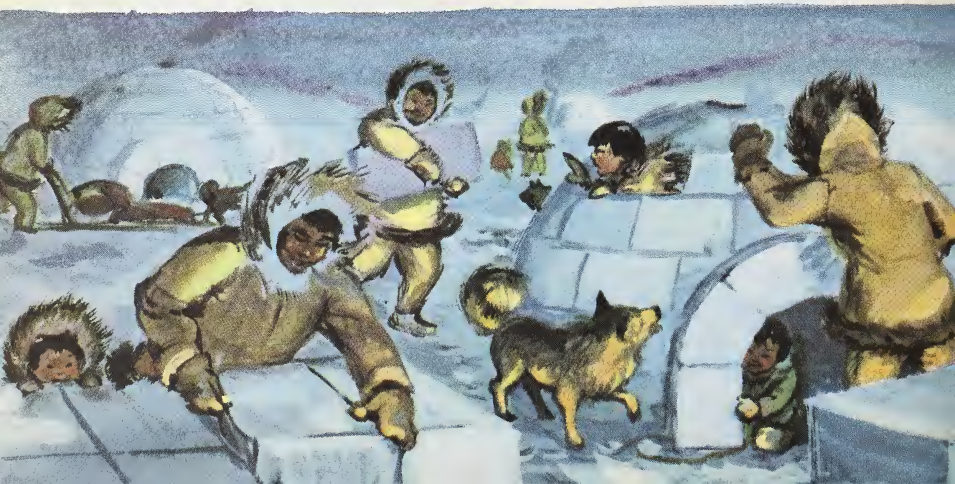


The northern part of Canada is the home of the Eskimos. They live on the many islands and sea coasts of our northern lands. Their homeland is very cold for many months each year. They must struggle to eat and to keep warm. Even though living is hard at times, the Eskimos are a happy people. They have learned to live comfortably with the things which are found in their land.

The Eskimo must build a warm, safe winter home. His home is near the seashore, where there are no big trees for building houses. Some Eskimos make their winter homes of snow blocks. They cut the hard packed snow with sharp knives. Long ago the blades were made of bone or flint. To-day they are made of steel. Round and round they pile the blocks. In a very clever way they make it smaller and smaller. At last the dome-shaped house, or *igloo,* is finished.

A hole is left at the top to let out the smoke. The family crawls in and out through a long, low tunnel of blocks. It is built at one side of the igloo, and keeps out the cold winds. One half of the floor is higher than the other. On this shelf are the skins which are used as beds. The inside walls are often lined with skins also. The igloo is built mostly when the father is on a hunting trip, or when the family is moving from one hunting ground to another. A clever Eskimo can build a snow house in an hour!

Building winter homes.



There is usually a small window in the igloo. Years ago it was made of a piece of sealskin as thin as paper. Nowadays, the Eskimo buys a pane of glass at the trading post. When the white men came to the northland, they changed the Eskimo's life in very many ways.

Many Eskimos make their homes of stones and sod. The stones are gathered near the shore, and the sods are cut from the grasslands. The Eskimo lays the stones one on top of another to make the walls. Then he stuffs the cracks between the stones with sods. When he has finished they are snug and tight. The roof is made of pieces of sod. The roots of the grass growing through the earth hold the roof together. Sometimes the builder uses driftwood or whalebone to hold the roof in place. Pieces of driftwood are carried by rivers and by the ocean currents from forest lands. After a long time at sea they are tossed upon the shore by the waves, or left by the tide.

Sometimes an Eskimo builds his home against a hill. He digs out a small room first. Then he adds a room of sod and stones in front of it. This room becomes the entrance to his cave-house.

A small dish, carved from soft stone, is used as a stove and a lamp. Seal or walrus oil is burned in the saucer lamp. The oil is taken from the *blubber,* which is a layer of fat beneath the skin of the animal. The oil soaks up into dried moss or fluffy grass seeds. This part of the lamp is called the wick. When it is lit, there is a bright, hot flame. Often the lamp makes the igloo very warm, and the Eskimo must take off some of his warm clothes. The Eskimo mother cooks meat over it in stone pots or she may use a metal pot from the trading post. Sometimes she may also use a wood or oil stove from the white man's store.

During the long, cold winter the igloo lies covered with snow. This blanket of snow helps to keep it warm. When the summer comes, the sun shines almost all day and night. Then the snow melts and water begins to drip from the roof. Now it is time to move into a new summer home.

The summer house is not at all like the snow house. It is a tent made of seal skins sewn together. The skins are stretched on a frame made of poles. Sometimes at the trading post the Eskimo will trade his seal skins for a canvas tent. He is very proud when he owns a canvas tent!

In the summer the ice melts, and open sea appears. Then the Eskimo can travel in boats and move from one hunting ground to another. The family packs food into large boats called *umiaks,* or women's boats. These have frames of bone or wood and are covered with skins. They are light, hard to sink, and will carry many people. The umiak is the family boat.

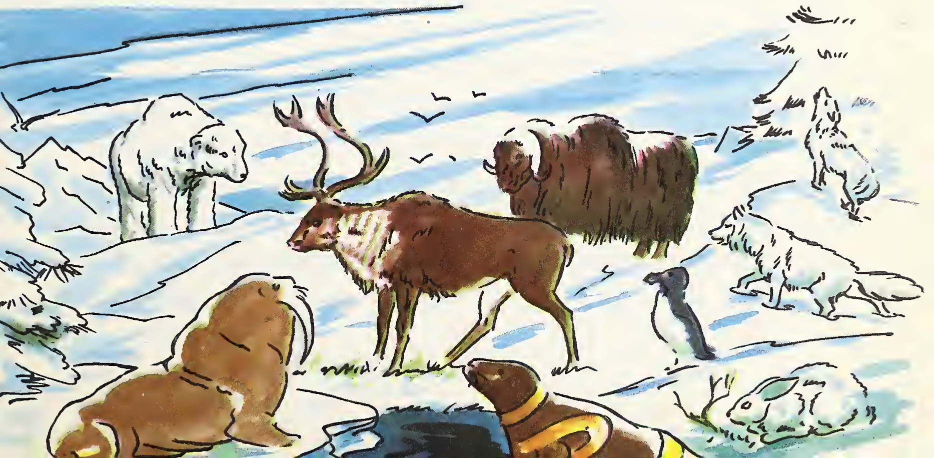
The Eskimos hunt and fish for most of the things they need. They get their food, clothing, tents, and boats from the flesh or skin of fish and animals. Even their money comes from animals, because skins are used as money at the trading post.

Besides hunting on foot, Eskimos hunt in *kayaks.* These are one-man boats used only for hunting and fishing. They are light, long, and narrow. Seal skins are carefully sewn together and stretched over a wooden frame. This makes a water-tight boat. A small opening is left in the middle. There is just enough room for one hunter to sit in it. Often the Eskimo fills the hole so tightly that water cannot get into the boat. The hunter is so clever that he can turn his kayak over and back up again without harm. Only an Eskimo can do this. He uses a paddle with blades at each end. With it he can make the kayak travel very quickly.

The seal is the most important animal to many of the Eskimo. They use the meat for food, the skins for clothing or money, and the blubber for food and oil.

The Eskimo hunter looks for a seal sleeping on the ice. This animal sleeps for less than a minute at a time. Between naps he looks carefully about him. If he sees danger, he dives into the water. The seal cannot see far or well and the hunter moves toward him *only* when he is asleep. At last he is close enough to throw his *harpoon!* A harpoon is a spear with a sealskin line fastened to the end of it.

From these animals the Eskimo gets his food and clothing.



The hunter pulls the seal in on the line, like a great fish. Some Eskimos use guns which they have bought at the trading post.

After the seal has been dragged home, it is skinned and the blubber is packed into bags. The meat and blubber are buried in the frozen ground. Even in the summer the ground is like a refrigerator. It thaws for only a foot at the top. The meat and blubber will remain frozen until winter. Then it will be used as food for the family dogs. It takes many seals to provide a store of food, clothing and oil for a whole winter.

The hunters also paddle out to sea and hunt for walrus during the summer. This animal is fierce, and this is dangerous work. A walrus could easily rip a light kayak to pieces with his sharp tusks. The Eskimo must be very clever with his boat and harpoon, to kill a walrus. He cannot use a gun, because the heavy walrus would sink. The body of the walrus gives the hunter meat, fat for oil, tusks for tools, and hides for ropes and clothing.

Sometimes an Eskimo may kill a whale. These great animals are useful for their meat and blubber, but not many are caught.

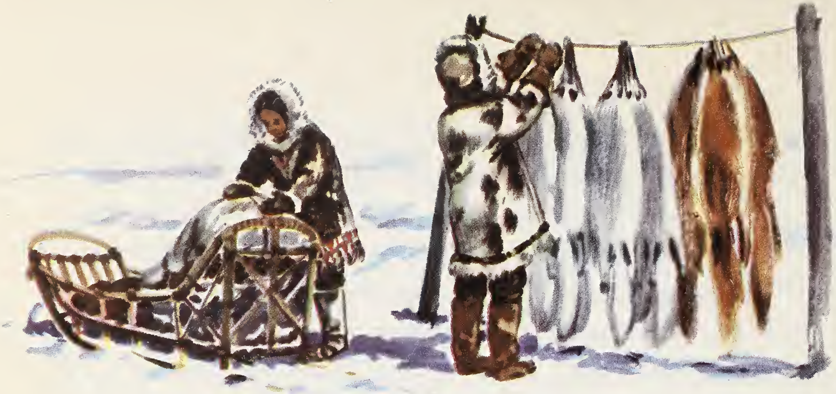
The Eskimo catches thousands of fish during the late summer. These are stored in the ground for winter food. Sometimes the hunter harpoons the fish. Sometimes he shoots them with an arrow to which a leather string, or thong, has been tied. To-day, many Eskimos use fish-nets.

During the summer the women and children gather berries, and catch fish in the streams. They gather the eggs of birds that come north to nest. They catch fat birds and freeze them for winter food.

The Eskimo and his family work all summer to gather food and store it for the winter. But still they cannot get enough. The winter is very long and the hunters must continue their work during the cold season. One seal will feed an Eskimo family and its dogs for only a few days. Hundreds of seals are needed.

In winter, the men hunt almost every day. They harpoon seals through holes in the ice. When the sea is frozen, the seals must keep a hole open where they can stick their noses through to breathe. The seal gnaws a tiny opening with its sharp teeth. This hole is very hard for the hunter to see, but his dog helps him. The dog finds the hole by smell. Then the Eskimo may have to wait for hours before the seal comes to the hole for air. The hunter holds a piece of thong to which a piece of bone is tied. He lets it down into the breathing hole. When the bone moves, the hunter drives his harpoon into the seal. Then he hauls it out on the ice with his line.

During the winter, the Eskimo also hunts and traps animals with valuable skins. These are Arctic foxes and caribou. There are many caribou in some parts of Northern Canada, Europe, and Asia. Caribou skins are used for clothing and bedding. The fox furs are traded at the trading post. Sometimes a polar bear is killed, but this is not easy to do.



Eskimo trappers busy with their harvest of furs.

Because food is so hard to get, Eskimos do not worry about setting the table and serving the food. All of them use knives for eating. Even the little children cut away large chunks of meat. They also use their knives to put the meat into their mouths. Forks are not used, and they do not eat soft food which requires a spoon. Their most important food is meat.

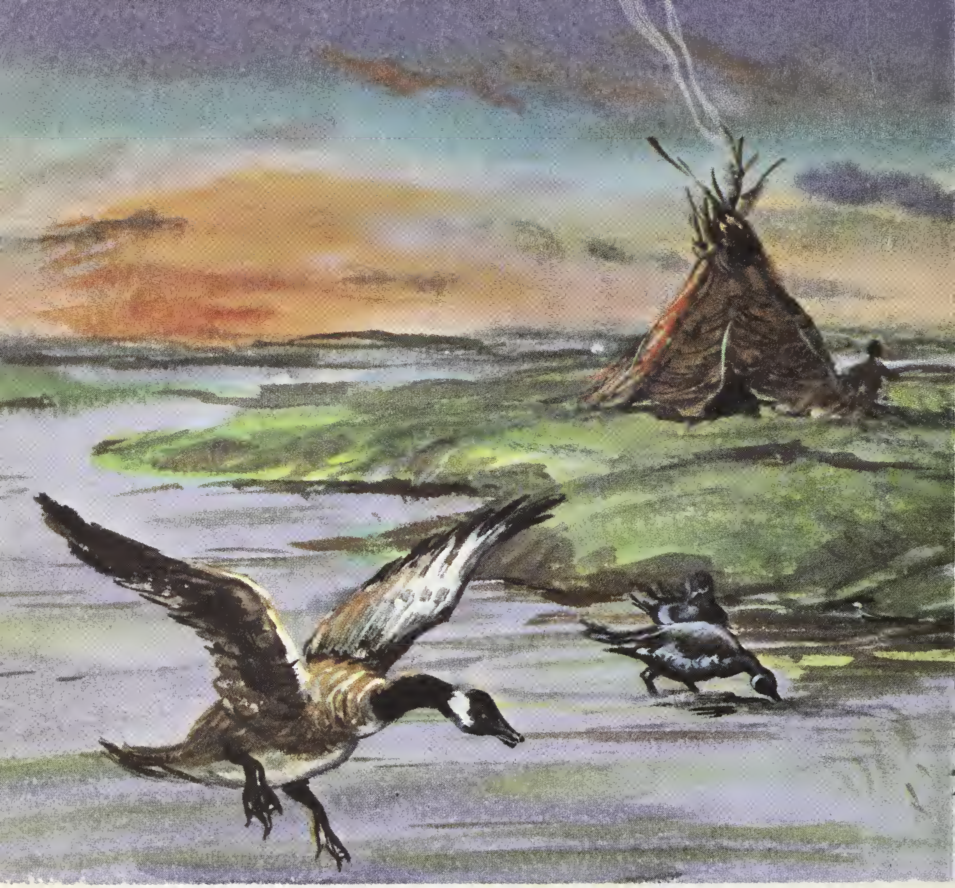
The women and girls make clothing out of skins. They are cleaned, dried, and stretched. The fur of the Arctic hare is used to make the hoods which the children wear on their heads. The jackets, trousers, and boots are made of sealskin. Boots made of sealskin are called *kamiks*. All Eskimos wear fur hoods, jackets, trousers, and boots during the winter. In the summer the women often wear dresses made from brightly coloured cotton bought at the trading post.

The Eskimo women cut the furs and fit them together. They are sewn with a very strong skin thread called *sinew*. The sinews swell and fill the holes made by the needles. This makes a watertight joining, or seam. Eskimo women are very clever at sewing. They used to sew with bone needles, but now they buy steel needles at the trading post. The mother and her older daughters are always busy with the hides. They make clothing, tent covers, the umiak, the kayak, sleeping bags, and bags for storing meat and blubber.

During the winter the Eskimo's only transportation over the ice and snow is by dog sleigh. The Eskimo depends on his dogs for hunting. He must see that they are always healthy and strong. Part of the meat and fish is always fed to the dogs. The children often have puppies as pets.

The dogs are hitched to the sleigh so that they spread out like a fan. The driver may sit on the sleigh, but usually he runs beside it. He guides the dogs by using a long whip, which he cracks in the air. The dogs understand these signals, and go forward, right, left, or lie down as the whip tells them. Without his dog team and sleigh the Eskimo could not travel far to hunt.

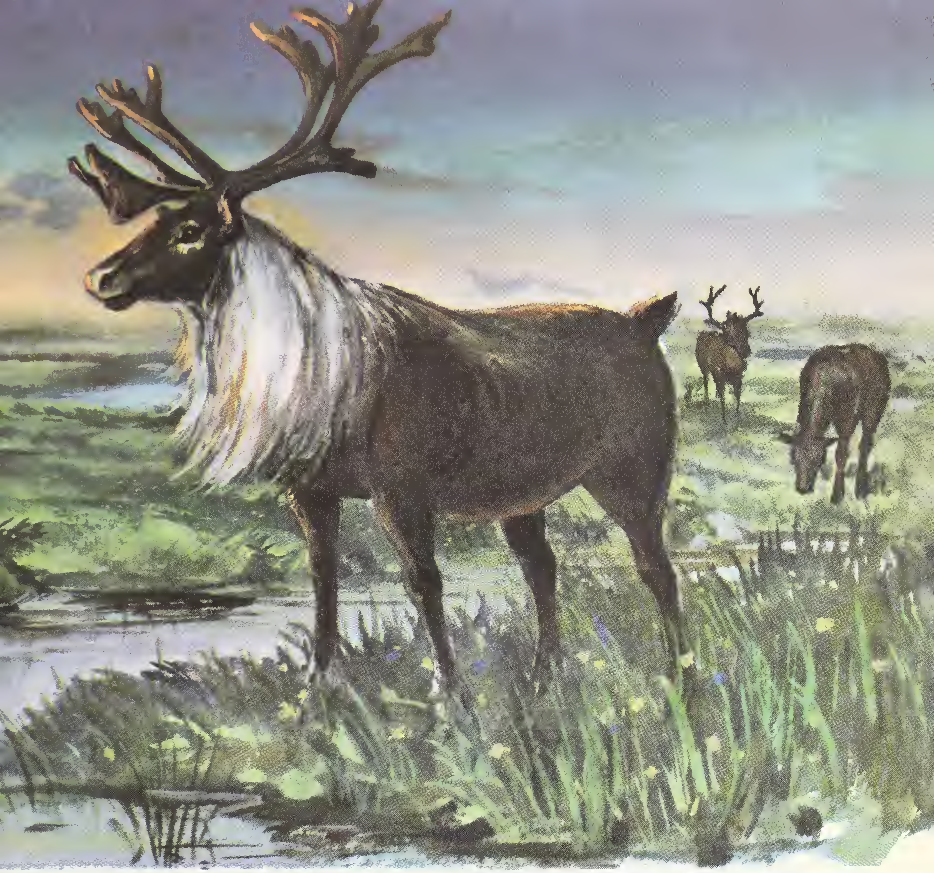
Eskimos live in small villages. A few families live in each village, and they are friendly places. Their houses are built close together. The children play outside for most of each day. In the winter, they often build small play igloos, and hitch pet dogs to their small sleighs. The children do not go to school, unless they live near a trading post with a school. Sometimes they are able to attend a school run by one of the churches. It is more important for the Eskimo boy to learn how to shoot, spear, harpoon, and set traps. When the boy is very small, he learns to drive a



Summer on the tundra.

one-dog sleigh. By the time he is your age, he can drive his father's sleigh of ten dogs. The Eskimo father spends many hours teaching his sons how to make a living.

At the same time the Eskimo mother teaches her daughters how to sew. First they make clothes for their dolls which are carved out of walrus tusks. They also learn to use the oil lamp.



Caribou and reindeer graze on the grass and flowers. The Canada goose and many other birds make their nests here.

There are some Eskimos in Canada who live mostly on the meat of the caribou. This is a large animal which looks like a reindeer. During the summer it feeds on grass and other plants which grow on the tundra. These broad lands lie along the shores of the Arctic Ocean and Hudson Bay. During the long winter, they are covered with snow. When the snow melts in summer, only a foot or two of the ground thaws. This turns into mud, and the grass and flowers grow on it. There are no trees because the roots could not go down into the frozen ground.

Caribou, reindeer, and wild ducks make the tundra their summer home. Captain Angus' friend, the Canada goose, lives here in summer also. The Eskimo who live on the tundra in Canada eat the caribou and use its skin.

The people who live on the tundra lands in Europe keep herds of reindeer. Their home is Lapland, and they are called Lapps. The tundra people of Europe and Asia tamed the caribou and reindeer long ago. Now they have great herds of animals, just as the rancher has.

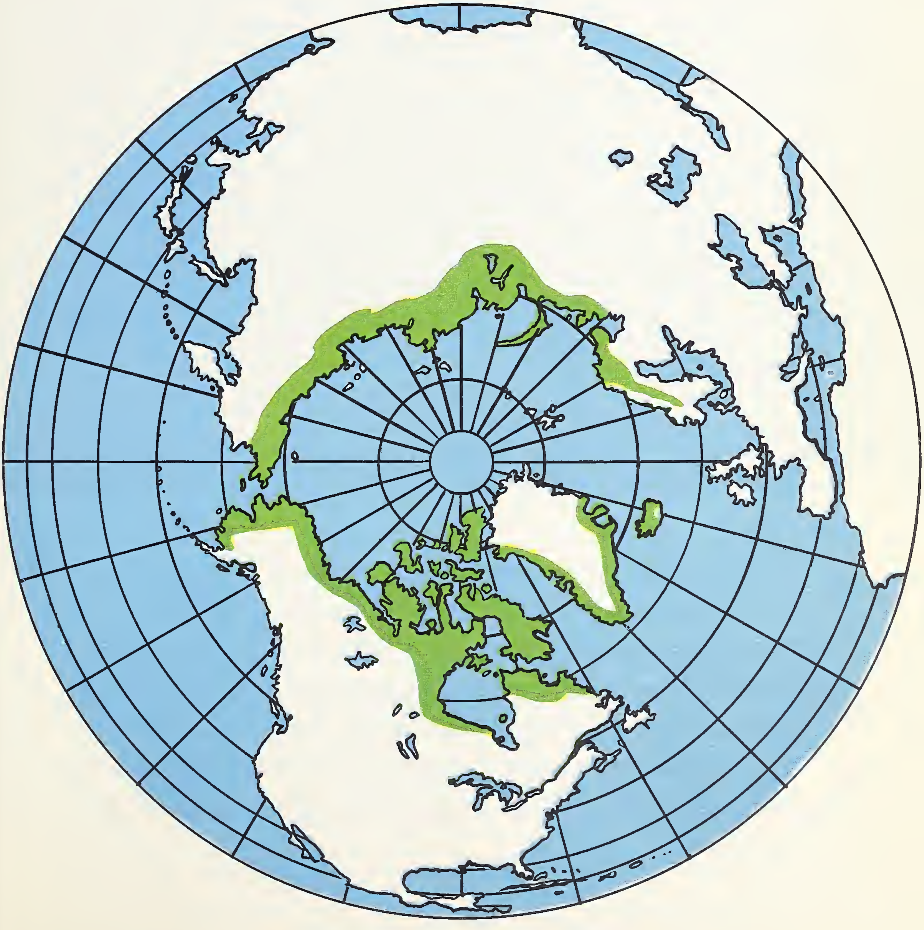
During the summer the Lapps drive their herds of reindeer out on the tundra to feed. Several families move with the herd. They pack their tents and bundles on the backs of reindeer. They stay in one place for about two weeks, for the reindeer soon eat all the grass and flowers.

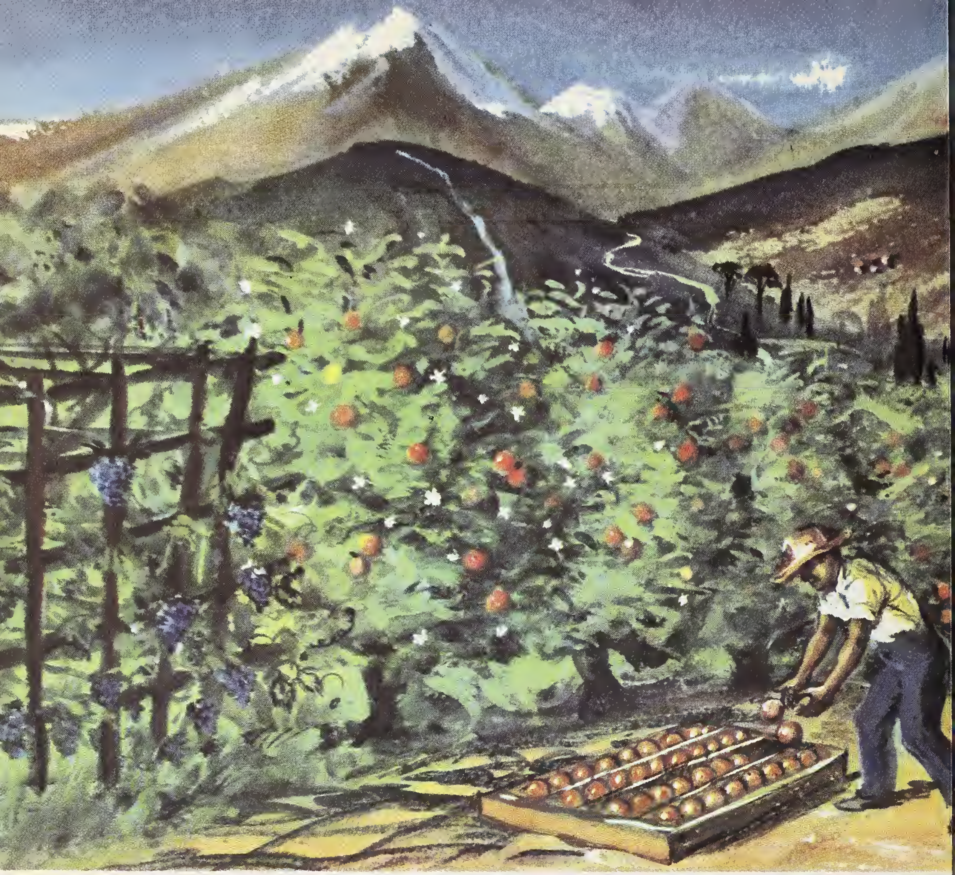
In the winter the Lapps drive their herds into the woods at the edge of the tundra. Here the reindeer digs for moss under the snow. This is his winter food. These people use reindeer to pull their sleighs instead of dogs.

The Canadian Government has bought reindeer from other countries and is teaching the Eskimo how to keep them. This will give the people of the north a better way of getting food and clothing. If the reindeer herds do well, the Eskimo will not have to depend so much on seal hunting.

The Eskimo in northern Canada are a happy people. They have learned to live on what they find around them. They have learned to build warm houses. Most important of all, they have learned to work together and to help one another.

The northern people live in the lands which are marked in green on this map of the Northern Hemisphere.

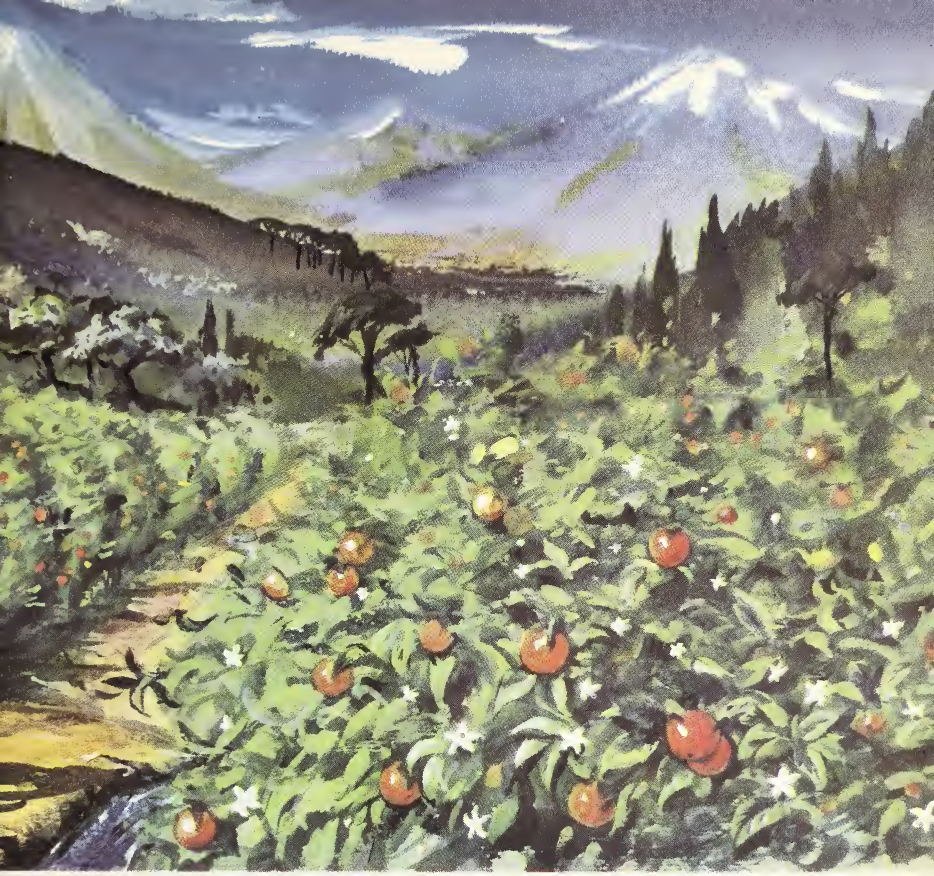




LIVING IN OTHER TEMPERATE LANDS

The twins and David have travelled far in Canada. They know that their country is very large. Now *you* know also that there are many ways of living in Canada.

There are broad plains, high mountains, and great forests. The prairie wheat farmer is used to cold winters



In countries with Mediterranean climates, oranges, lemons, and grapes are grown on land between the mountains and the sea.

and hot summers. The ocean fishermen work through milder winters and warm summers. On the Pacific coast where David lives there is much rain. Sometimes the prairie farmer does not get enough rain for his crops.

Different parts of Canada have different kinds of weather. The kind of weather a place usually has is called its *climate*. Northern Canada has a colder climate than southern Canada. David's home has a wet climate. On the prairies the climate is dry.

Now look at the map on page 51. You will see that Canada is in the North Temperate Belt. Many other countries in Europe and Asia are in this wide strip of land also. Countries in it are called temperate lands. Some have climates which are warmer than any in Canada.

Many temperate lands are found near the shores of the Mediterranean Sea. This is the long, narrow sea between Europe and Africa. You will remember that early sailors and traders sailed its waters long ago.

Canadian ships often sail across the Atlantic. They pass through a narrow strait into this great sea. Our sailors soon learn that most Mediterranean lands have the same kind of climate. They notice that their winters are not very cold, but rainy. The summers are dry and the people do not expect rain for weeks and weeks. Canadian farmers could not grow their crops in these countries. Mediterranean farmers make their crops and work fit their climate.

North of the Mediterranean Sea are mountain ranges. They shelter the lands between the mountains and the sea. Many streams flow down from the mountains. They are used to irrigate the plains near the coast. In these warm fruit lands oranges, lemons, figs, and olives are grown. They cannot be grown in Canada. Why?

The warm waters of the Mediterranean help to make the winters mild. The girls and boys see very little snow, and the ground seldom freezes. Winter is the rainy season. There will be a day of rain, and then several days of bright sunshine. Then the grass is always green. Small fields of wheat begin to grow, and by April red poppies are blooming. Many people from colder parts of Europe come to the Mediterranean for a winter holiday.

By the end of summer, there is a great change. No rain has fallen for several months. The grass is now brown and dry. The hot sun beats down on the bare and dusty land.

At noon each day the country and cities are quiet. Most of the people are taking a mid-day rest. It is too hot to move about. Most work is done in the early morning and late afternoon. Then the sun is lower in the sky and it is cooler.

Most Mediterranean people are farmers. Their farms are very different from the general farms of Canada. The men and their families live in villages. Each morning they go out to work in their fields which are outside the village. Many farmers still use oxen to do the heavy work. Others use horses and donkeys.

In the villages of Spain, Italy, and Greece all the houses are built of stone. In every house there are baskets of dried figs and jars of olive oil. Strings of onions hang from pegs. The people eat bread, olive oil, fruit, onions, and other vegetables such as lettuce and cabbage. They do not eat meat often—perhaps once a week!

The Canadian farmer cuts his wheat in July or August. The Mediterranean farmer cuts his in May. It grew during the wet winter and ripened when dry weather came. The crop is used to make bread for the village people.

Sometimes the farmer's land is in different places. It may be in two or three pieces. If he is lucky one part is near a stream which flows all summer. Then he can use the water to irrigate his land. Rows and rows of dark green orange and lemon trees grow wherever there is water. They need much moisture and would soon die without it.

Land between the rows of fruit trees is not wasted. Here the farmer grows lettuce, onions, cabbage, and other garden crops. He sells his fruit to buy many of the things he needs. Oranges and lemons are sent to Northern Europe. In these countries it is too cold to grow them. Lemons are sometimes shipped to Canada. The Mediterranean lands are Europe's "fruit basket."

Another part of the farmer's land is on the hillside. Here the land cannot be irrigated. Because the land slopes water cannot be made to flow slowly through the crops. In the summer this land is very dry. Here the farmer has his olive and fig trees, and his grapevines. These fruits do not need as much water as oranges and lemons.

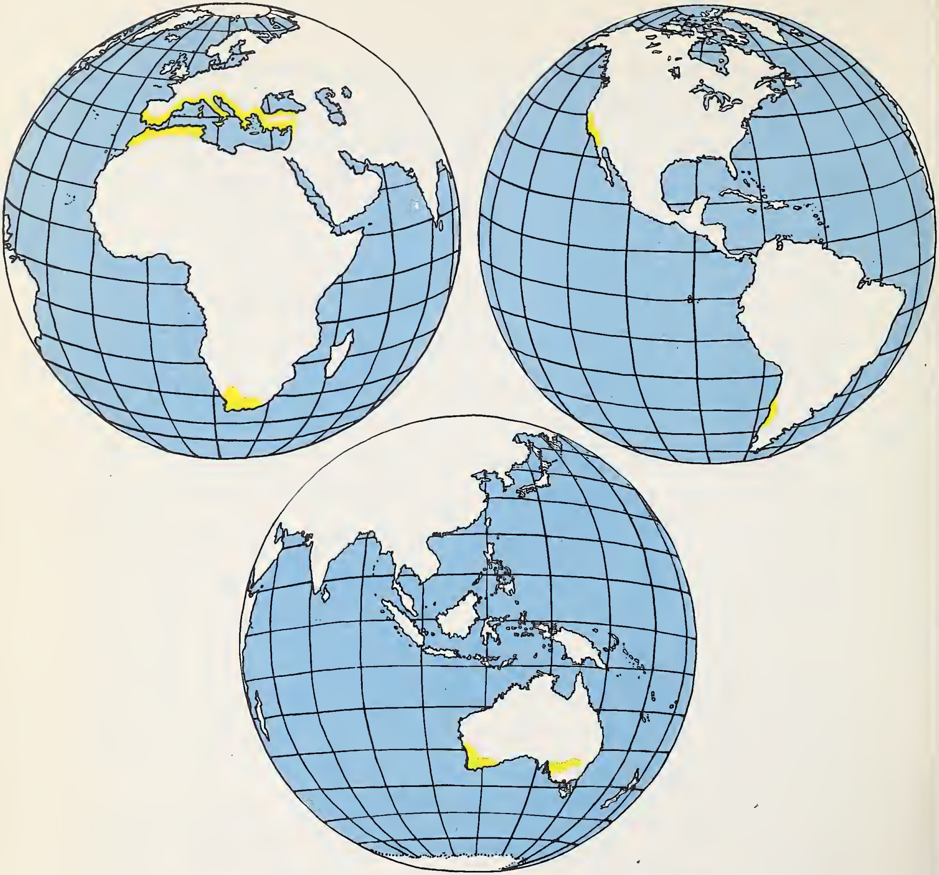
The ripe figs and olives are picked in the fall. The figs are spread out on the ground to dry. After they are dried they will keep for a year or more. The ripe olives are crushed by rolling a large stone wheel over them. The crushed olives are put into a press and squeezed. Every drop of golden oil is taken out of them. Many Mediterranean people use olive oil as we use butter. It keeps much longer than butter. In these warm countries where there are few refrigerators, it does not spoil quickly.

The grapevines which grow in Mediterranean lands have very long roots. They go deep down into the ground to get water. In this way they can live during the hot, dry summer. Many of the grapes are spread out on trays among the vines. After a few days in the hot sun they are dried. Then they become raisins. This dried fruit is packed and shipped to all parts of the world. Wine is made from grape juice. Mediterranean people drink it very often.

Most Mediterranean countries have many people. There are not enough good farms for all. To get more land, the farmers terrace the hillsides. They do this by building walls to hold up little strips of soil. It takes many years and much hard work to build up farm land this way. The terraces look like giant steps up the hillsides. Many farmers from these countries have left home to go to other lands. Some have come to Canada. They hope to make a better living on larger farms.

Of course, they are used to the sunny Mediterranean climate. Can they find a climate like it in other lands? They surely can—on the four continents of North and South America, Africa, and Australia.

In North America the Mediterranean climate is found in California. High mountains shelter the orchards, or groves. Many of our oranges and lemons come from this pleasant land. South of Canada is our good neighbour, the United States. On your globe you will find California on the west coast of this great country.



These globes show the lands which have Mediterranean climates.

In South America a country called Chile (Chill-e) stretches along the West Coast to the southern cape. High mountains cut off the cold winds. Along the sea are large groves of oranges and other fruits. Here also are many grapevines. Chile is the "fruit basket" of South America.

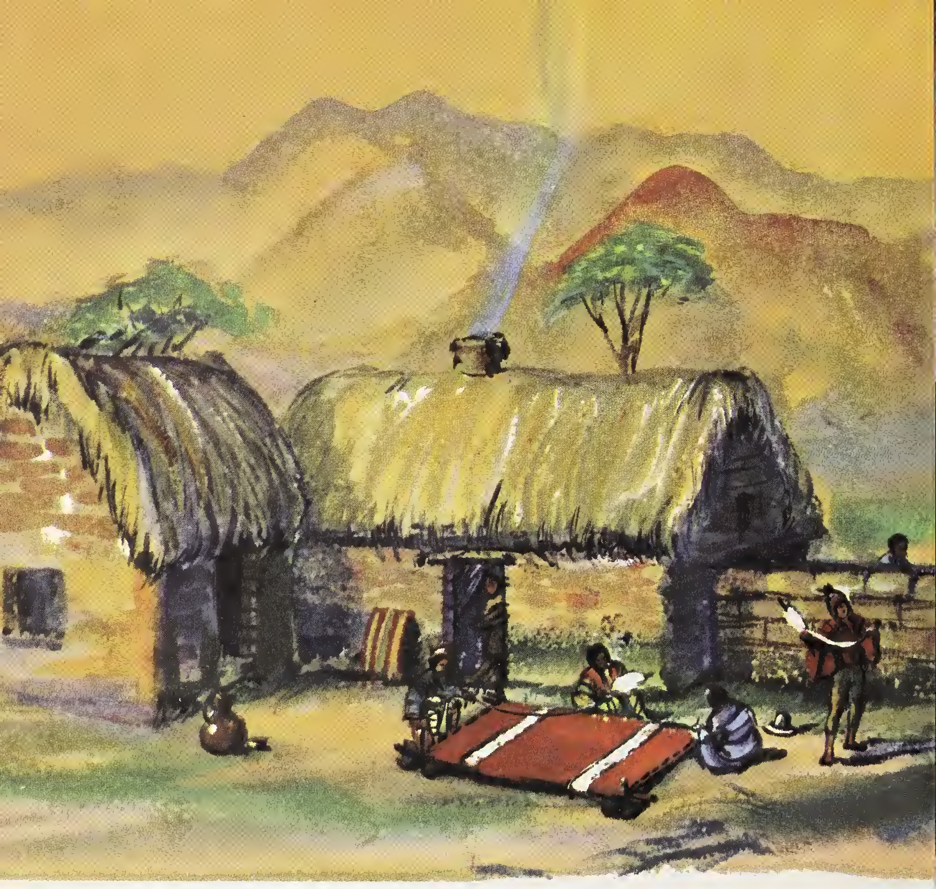
Many years ago people from Europe settled on the southern tip of Africa. Here they found a Mediterranean climate, and planted fruit trees. To-day this part of South Africa sends fruit to Britain and to other countries in Europe.

Small parts of Australia have this sunny climate. They are along the south coast of the island continent. Australia is a long way from the markets of Europe. Fresh fruit would soon spoil, and much of it is dried or canned before shipping. The fresh fruit is sent to other parts of Australia.

Turn again to the globes on page 51. In what Belts do you find the lands with the Mediterranean climates? They are all in the North and South Temperate Belts. There are many different climates and ways of living in temperate lands.

Preparing a meal in an Italian home.

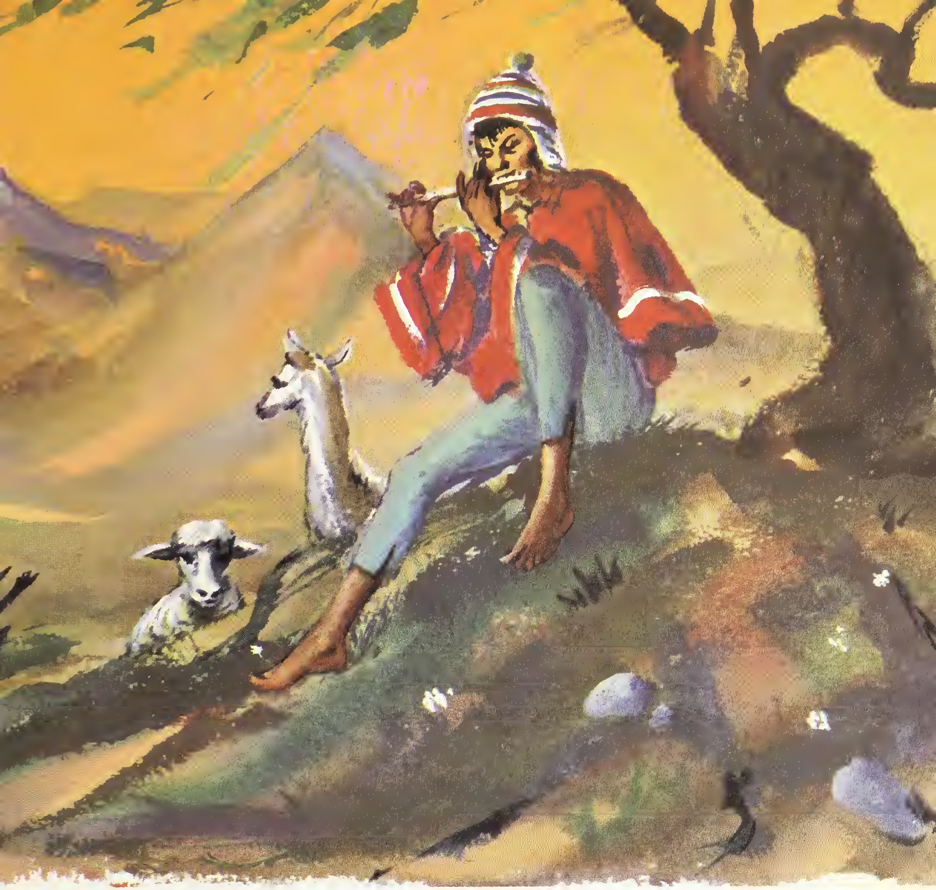
Toronto Star Syndicate



LIVING IN MOUNTAIN LANDS

On both sides of the equator is the Hot Belt. Here the climate is hot, or torrid. The weather is very warm both in winter and summer. You would find it very hard to live there.

You may think that all countries in this Belt are very hot. In this part of the world the sun always rises high in



A home on the high plateau in Bolivia.

the sky each day. But there are some lands near the equator which are not warm. These lands are on high mountain plateaus. They are almost shut in by great peaks. Many of the mountains are more than three miles high! Even though they are near the equator, some mountain peaks are snow-capped all year.

There are high plateaus in the Hot Belt lands of both North and South America. If you look at your globe on page 52, you will see some parts shaded in black. These are high mountain lands. In North America there are plateaus in Mexico. Those in South America are in Peru and Bolivia. The climate on all these high plateaus is very much the same. Because they are so high, the weather is always cool, or cold.

Most of the people who live in these highlands are Indians. They are not quite like the Indians of Canada. Hundreds of years ago, these people were very clever. They knew how to build great stone cities in the mountains. They knew how to mine silver and gold. From these metals they made many beautiful things. In Part III you read that the Spaniards made larger and faster ships. They did this to carry the rich cargoes of gold and silver from the Indian mines to Spain. Later the mountain cities were destroyed by the white men. The Indians forgot their clever ways.

One of the highest plateaus of all is in Bolivia. It is more than two miles above the ocean. High mountains look down on it. Very cold winter winds blow down the mountain slopes. Trees will not grow. Only bushes and coarse grass struggle to live. But in the summer there are meadows of tender green grass on the plateau.

The coarse brown grass is the food of the *llamas* and *alpacas*. These animals are as important to the plateau Indian as the seal and caribou are to the Eskimo.

The llama is gentle, if he is treated kindly. He is a beast of burden. Railways and airplanes connect the plateau with the outside world. But the llama carries most of the loads down the steep mountain passes. He has a soft foot, with two sharply pointed toes. His hind legs are strong, and climbing is very easy for him. He can go for many hours without water, and can carry a heavy pack on his back. He will not carry more than one hundred pounds! If the pack is too heavy, the llama lies down. He will not get up until his master takes away part of the load. If he is teased by unkind people, he may spit in their faces!

The llama is more than a beast of burden. He also provides his owner with meat and wool. The people are very proud of their llamas and take very good care of them. Llamas have coats of many colours. They may be black, brown, spotted—or even white. The Indians believe that it is lucky to own a white llama.

The plateau people also keep herds of alpacas. These are very woolly animals which are cousins of the llama. They are kept in herds like sheep and will not carry loads. From them the Indians get most of their wool. It is very valuable and can be used to make warm winter coats.

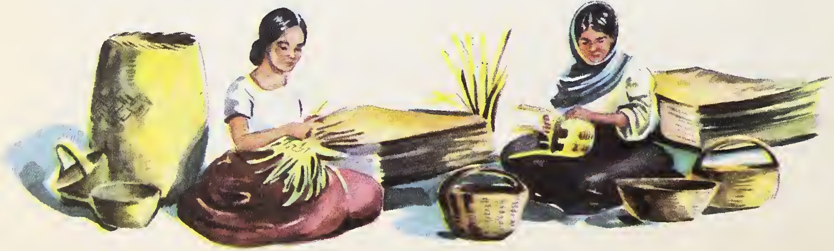
The llamas and alpacas are brought home from the mountain pastures by the Indian boys. They are herded into a small pen, or *corral*. It is built of stones, as there is little wood.

Beside the corral is the Indian's stone hut. The door is made of alpaca hides. There are no windows in the thick stone walls. The roof is made of straw.

Inside the house there is only one room and very little furniture. The floor is hard packed earth, and there are platforms two feet high around the walls. These, too, are made of earth which has been tramped down hard. Soft alpaca skins and woollen blankets are spread over them. These are the beds of the family. Brightly coloured blankets are hung from the walls.

Every thing the Indian owns is kept in this one room. There are hats, bags, and shawls. All these are knitted in bright, striped patterns. There are a few clay dishes on the shelves. Strings of red peppers, corn, squash, and pumpkins hang from the rafters. There are large baskets woven from reeds. In them the Indians store many things. There is a tall water jar made of clay with a handle on each side. Llama wool rope is used to tie the jars to the backs of the llamas.

The cooking is done in another hut. The chief food is a stew made of dried potatoes, dried meat, and dried corn. These are all boiled together in water. The family sits on the ground outside the cooking hut. The mother puts stew into clay bowls and passes one to each person. They do not use spoons or forks, but lift the bowls to their mouths. Often they dip up the stew with soft bread. This is made from a grain, called quinoa (ke-no-a), which the mother grinds by pounding on large, flat stones.



Plateau women weaving baskets.

The mother works in the fields for most of the day. She must also find time to work with her loom. This is a simple machine for weaving. She makes shawls, blankets, and saddlebags. These she takes to the market for sale. The father and his sons sometimes spin the wool into thread. They do this as they walk behind the llamas, or herd their flocks.

There is little fuel for fires on the high plateau. The cold winds find their way through the smallest cracks. Warm clothing is very important to the people. The men and boys wear shirts that button to the neck. They have long underwear of gray wool. Over it they wear short trousers, and a black wool jacket. Separate woollen sleeves are knitted of bright wool. These are pulled over the shirt sleeves and tied between the elbow and the shoulder. Pointed caps with ear flaps are worn by men and boys. They are knitted of brightly coloured wool.

There is very little machinery on the high plateau. Most of the work is done by hand. When the men have sheared the llamas and the alpacas, the women wash the wool and brush it smooth. A coarse cloth is made from llama wool. Most of the alpaca wool is sold because it brings a high price. You can buy clothes made of alpaca wool in Canada, but they are expensive. Dyes are used to give the wool bright and beautiful colours. They are made from plants and clays which are sometimes bought at the town market.

Every jug, bowl, plate, and cup is made of clay by the mother. She cares for the few chickens which the family may have. She also dries the meat and potatoes.

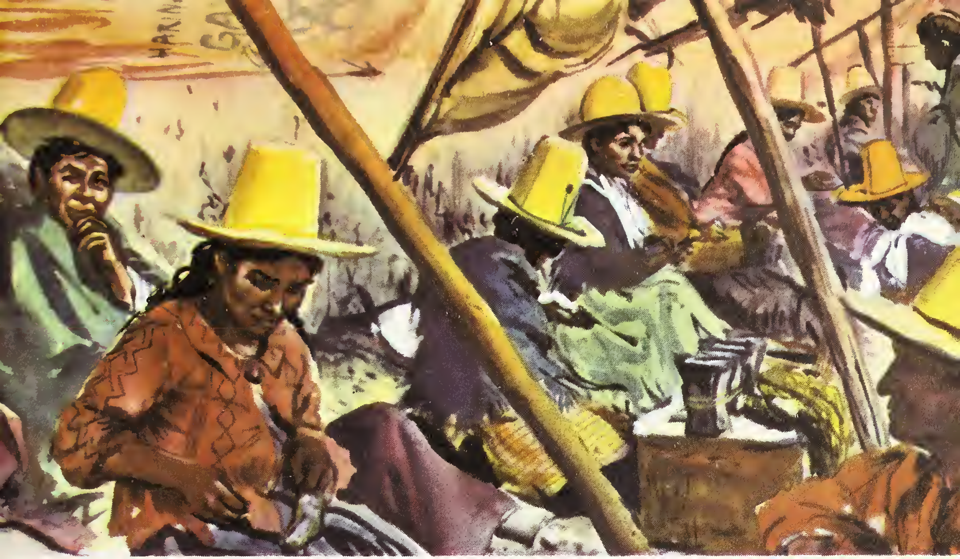
The father has only a very small piece of land. On it he raises some vegetables, small yellow potatoes, and the grain called quinoa. The cold, frosty nights do not harm these plants. The temperature is about the same winter and summer. Most of the rain falls in the summer, when the crops are grown. The fields are ploughed with home-made wooden ploughs. These have iron points. When the land has been tilled, the larger chunks are broken with a heavy hoe.

The men also gather small branches from bushes and small pine trees. They tie these into bundles and take them to town for sale. Here the people use them for fuel.

The Indian father has another way of earning extra money. He carries freight on his llamas. Perhaps he transports ore from the tin mines in the mountains to the railroads. He may also work in the mines for part of the year.

The Indian boys and girls do not have much time to play. Making a living is hard work for the whole family. The boys herd the animals while the father farms or works in the mines. The girls help with the cooking and weaving.

Friday is market day in most plateau towns. The father loads the llamas. There are bundles of wood, sacks of wool, baskets of chickens, and other goods. He fastens the load carefully and the family sets out for market.

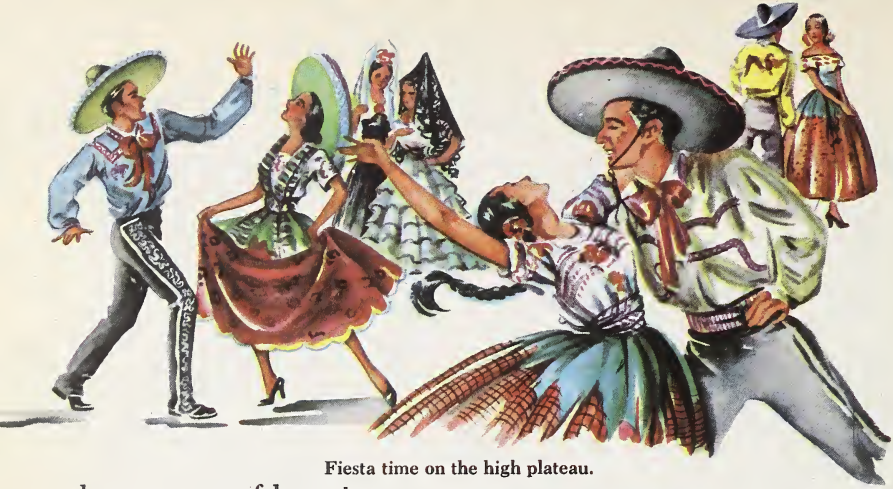


A Bolivian market place.

The market place is a broad square in the town. The women sit in rows and set out their goods on shawls. Buyers squat in front of them to look at the things for sale. The men take wool to a wool buyer. Soon the square is a gay and noisy place.

Market day is a holiday for the plateau children, but the *fiesta* is a holiday for everyone. A fiesta is a celebration. There are fiestas for each season of the year. Many of these are church holidays, but some are in honour of famous men. A fiesta usually lasts for several days. It is held in the village. There are music and dancing, parades and fancy costumes.

A long line of people wearing queer masks goes along the crooked streets. Everyone wears his best clothes. Everyone joins in the whirling dances. People dance until



Fiesta time on the high plateau.

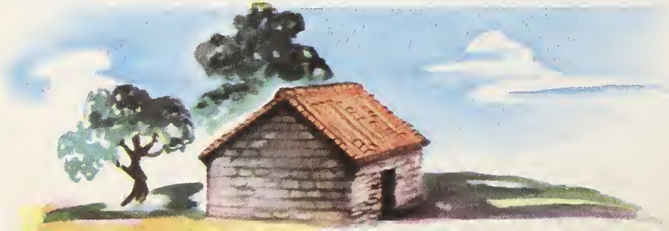
they are out of breath.

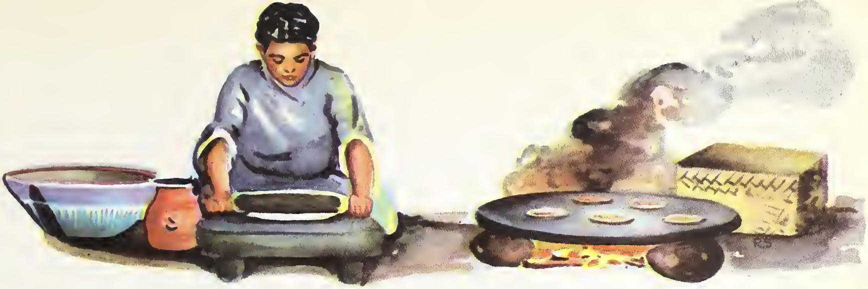
There are booths where candies, nuts, and fruit are sold. The people have a good time. They forget the cold and their hunger. They do not think of the hard work between fiestas.

Living in Mexico

The climates on the plateaus of Bolivia and Mexico are alike. The Indian people in both countries live in much the same way. The great plateau in Mexico is not as high as the one in Bolivia. That is why the weather is not as cold. The Mexican Indian has no llamas or alpacas. His beast of burden is the donkey. His house is made of stone or *adobe* (a-doh-bee) bricks. These are made of sun-dried clay. The chief food is the *tortilla* (tor-tee-yah) which is a kind of corn meal bread. In Mexico the Indians enjoy fiestas too.

An adobe house.

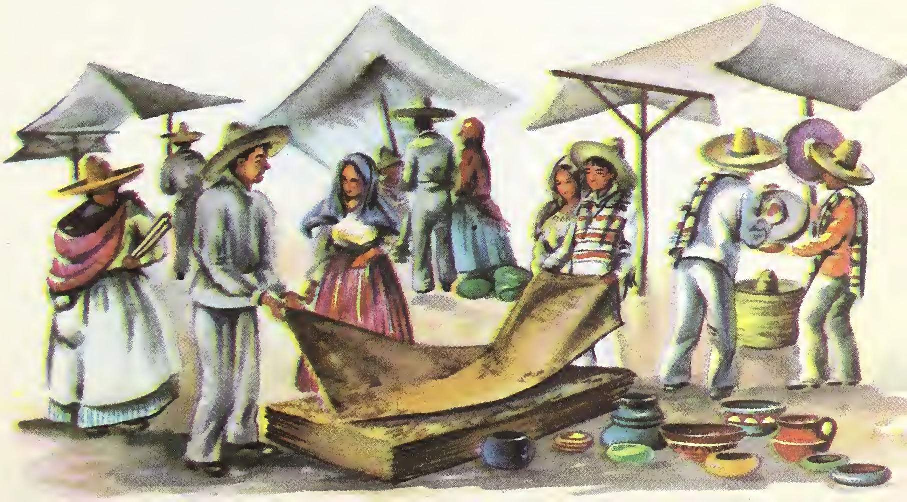




A young Mexican makes tortillas.

The way of living on the Mexican plateau is changing. Half of the people in the country live on this high tableland. Many modern cities are being built. New factories are making the goods which the people need. City streets are full of well-dressed people, as in Canada. There are large, modern hotels and apartment houses. New highways are being built into country where only Indians live now. The Indians are being taught better ways of farming. They are learning how to make beautiful jewellery. It is made of silver from the Mexican mines. The tourists who come to Mexico are eager to buy it. Some of the silver-work is sold in the stores of other countries.

A Mexican market place.

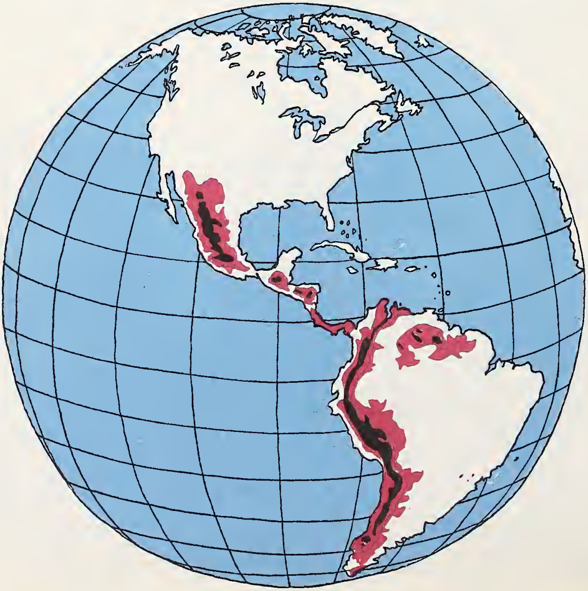


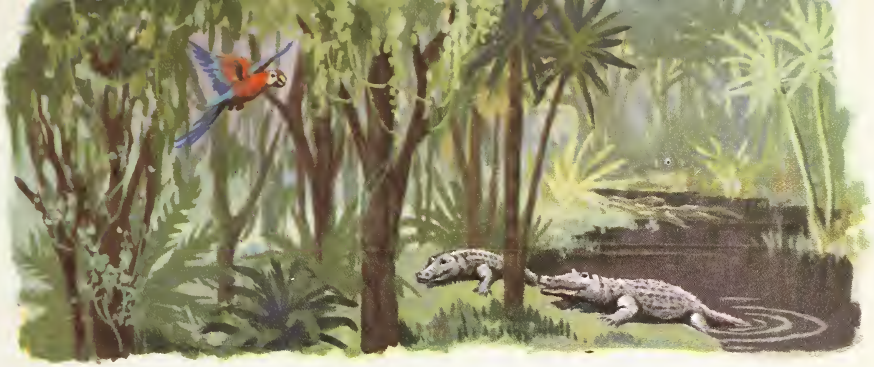
In Bolivia and Mexico there are many mountain communities. The ways of the people have not changed much for hundreds of years.

In some mountain countries the people live as well as we do. There are great cities, new factories, and pleasant homes. There are excellent farmers who raise good crops on the slopes and mountain plateaus. The most important of these people live in the Alps Mountains, in Europe. Their country is Switzerland.

In Canada there are high mountains in British Columbia and Alberta. There are Canadian mountain communities in these provinces. You have read about the fruit farms of the Okanagan Valley in Part V. There are also many other farms. Some are in the Rocky Mountain valleys. Others are on plateaus. Some are general farms, and others are cattle ranches.

This globe shows the high plateaus in North and South America.





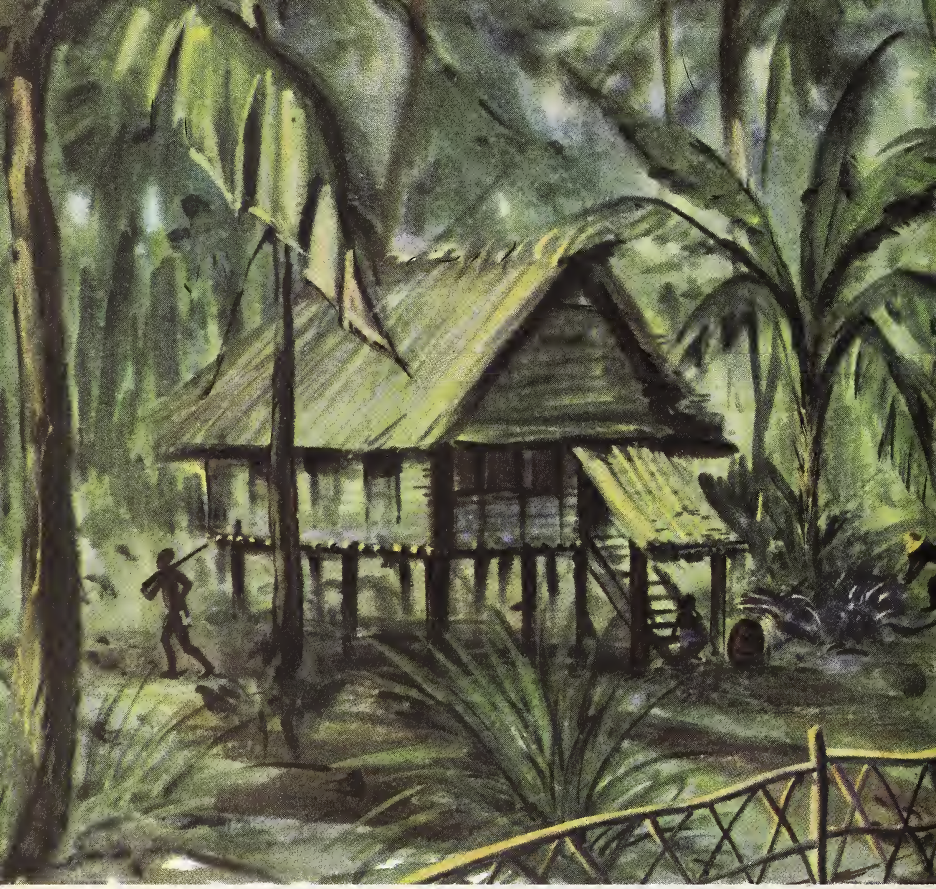
LIVING IN HOT, WET LANDS

Captain Angus always said that he liked to sail across the equator. Then the crew of his ship had fun. Some of the sailors wore fancy costumes. One man usually dressed up as the "King of the Sea." Sailors played tricks on some of their friends who had never crossed the equator before. But Captain Angus also told his neighbours in Southport about the great heat in most of the lands near the equator.

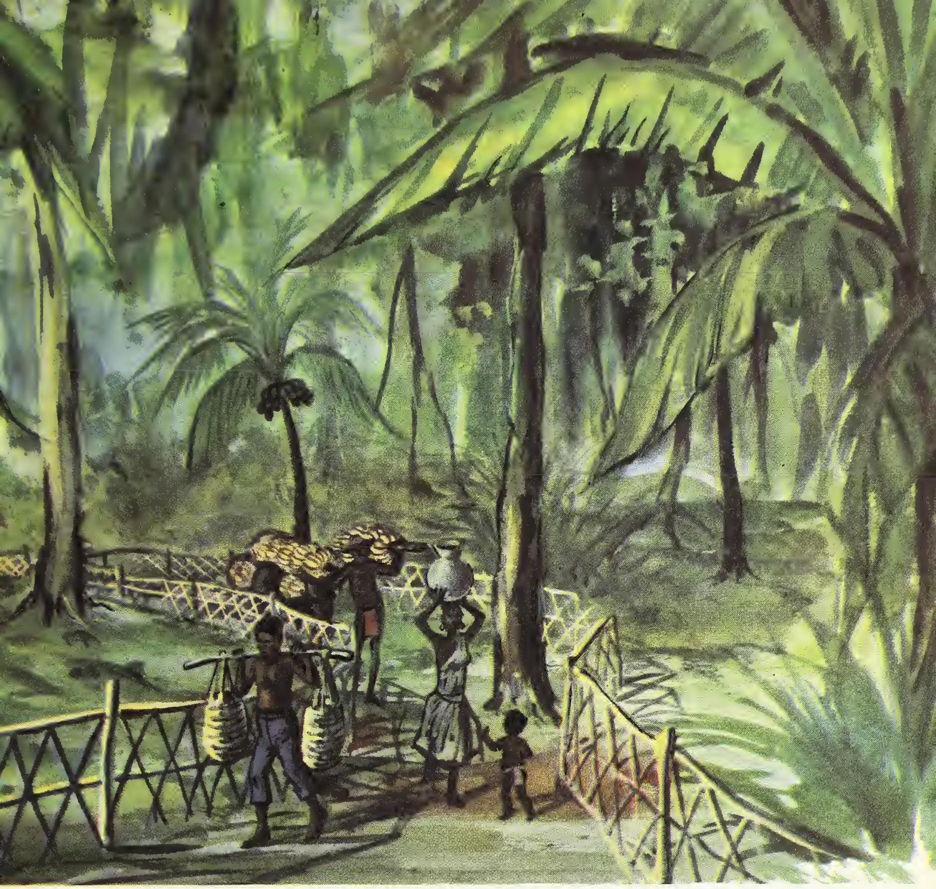
You know now that some equator lands are on high plateaus. They have cool or cold climates. In the other Hot Belt lands the weather is always hot. Sometimes there is little rain and the climate is very dry. You will read about hot, dry countries later.

In some Hot Belt countries, the people are used to very heavy rains. It is in these lands that the *jungle* grows. Jungles are found only where it is very hot and wet throughout the year.

The jungle is always green, and it is usually very quiet. Almost every day rain falls. Heavy, steaming mists hang over the damp forest lands. It is hotter than the hottest days of summer in Canada.



In the jungle the trees and plants grow thickly. Brightly coloured birds and insects are everywhere. Huge moths and butterflies flit from flower to flower. There are many harmful insects too. The jungle people do not like the mosquitoes, fleas, cockroaches, and beetles. Some of these move very quickly and can kill with their bites of poison.



In some jungle lands the palm leaf houses are built on poles.

There are many kinds of ants, large and small. Mosquitoes which carry disease germs are everywhere.

With so many insects to bother them, you would not expect many animals. But in the jungle there may be monkeys of all kinds, giant pigs, buffaloes, and elephants.

Because there is so much rain there are great rivers in jungle lands. One of the biggest is the Congo River in Africa. It crosses the equator twice. Find it on your globe. Many people live near the banks of this river.

Most of the dwellers of the Congo valley are negroes, or black people. The white people who live in this land have come from Europe. Africa was the first home of the negro people.

The people live in villages cut out of the forest. They chop away all trees and brush to make a clearing and then build their houses. There may be thirty or forty huts in the village. A Congo house can be built much more quickly than a home in Canada.

Four posts are set up at the corners. Each one has a fork at the top. Four large poles are placed across the forks, and smaller poles are laid on them. This is the frame work of the house. It is ready to be fastened together and covered.

The men tie the frame with strong pieces of vine from the jungle. The roof and four walls are covered with large leaves of the palm tree. The girls, boys, and women help to

Jungle homes in Africa.

get the palm leaves ready. A thick layer of leaves keeps out the heat even better than the roofs of our houses. The palm leaves are fastened to the poles with more vines. When the house is finished it is a very good jungle home. It has no windows. Fresh air comes in through the door and between the palm leaves on the walls.

The beds are mats made of grass. The negro women weave them of strong grass, palm leaves, or bamboo. Bamboo is really a very tall grass. Sometimes we use it in Canada to make fishing poles. The mats are put across frames of poles, and this makes a bed. Sometimes the mats have coloured pictures woven into them. The women are good weavers and often make baskets too.

None of the houses is large. The family cooks and spends most of its time outside. The houses are used only for sleeping, and large houses are not needed.

Congo women weaving baskets.

There are no telephones, telegraphs, or radios in the Congo villages, but the people can send messages quickly with drums. Some of these are made of pieces of hollow logs. A skin is stretched over the top of the hole. The negro drummer beats the tight skin with his fingers. The message booms out across many miles of jungle to another village where it is heard and passed along. Messages can be sent hundreds of miles in a night. This way of communication has been used for a very long time.

Nearly all of the goods are carried on the backs of the people. Are there no beasts of burden? Where are the oxen and horses? In the Congo valley these animals do not carry loads for men. This is because of a small insect called the *tse-tse* fly. The fly carries a sickness which kills horses and cattle when it bites them. As long as there are tse-tse flies the animals cannot live. Men can protect themselves from the fly as they carry freight through the jungle. Near the rivers, goods are transported by boat.

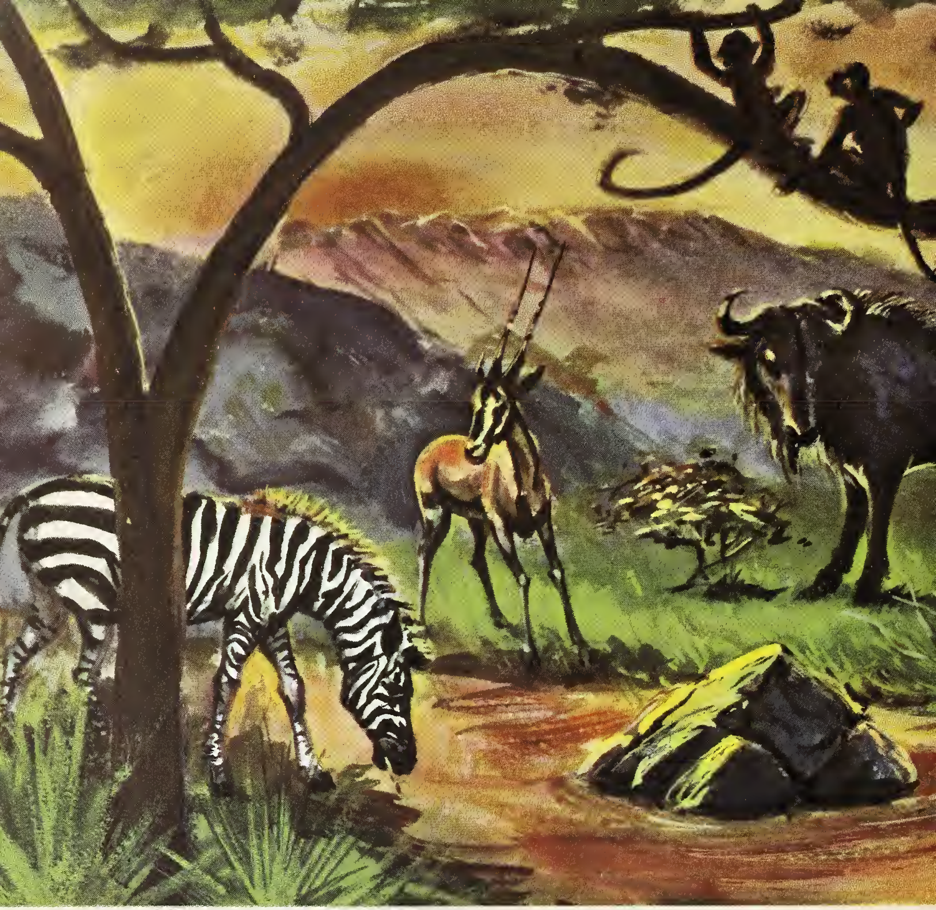
When they have plenty of food and water the carriers travel easily along the jungle paths. Each man carries about sixty pounds. They travel in a single line like a human freight train. If food is needed the carriers must go into the jungle to hunt. They kill monkeys and other animals, and birds. To bring the monkeys close enough to shoot, the hunters make calls which sound like real monkeys.

All the village people work for themselves except the blacksmith. He makes things out of iron for the other villagers. They pay him with vegetables, meat, baskets, and other things which he needs. The Congo people have known how to work with iron for hundreds of years. From iron the blacksmith makes spearheads, knives, hoes, and axes. He is an important person in the village, because the people need the things he makes. Not every village has a blacksmith. To-day ships bring goods to the Congo from countries such as Canada. The factories in our cities make tools and other things which are useful in the jungle. If the African wants our goods he must trade things we need for them. If he has nothing we want he cannot buy from us.

The people of the Congo valley get their meat by hunting in the jungle. They also eat many fruits and vegetables. Every village family has a garden. Sometimes the gardens are more than a mile from the village. When new land is needed, the men go into the jungle. They look for a new place where the soil is good. In the driest time of year they cut the trees, bushes, ferns, and vines to make a clearing. It is heavy work to clear the land with knives and axes. But the men are happy and sing as they work.

The workers leave some small tree trunks standing. They will use them for poles on which their beans can climb. The rest of the wood is put in piles to dry and then burned. Firewood for heating is not needed in these lands!

It is the women's job to plant the garden. When the seeds ripen they gather them, with the help of the children. Often they find good seeds in the jungle and bring them home for planting at the right time. The women use iron hoes and long wooden planting sticks. They plant corn,



These jungle animals live in the tall grasslands. Can you name them?

tomatoes, beans, pumpkins, peppers, peanuts, and a grain called millet. They grow bananas and *yams* also. A yam is very much like a sweet potato.

The women make holes in the soft soil with their planting sticks. The stick has a pointed end which makes a small hole. They drop a few seeds into each hole and cover

them with their bare feet. The Congo farmers know how to use fertilizer to make plants grow better. They do not have fertilizer which is made in factories. Instead they use ashes and dead leaves from the jungle trees.

The plants grow very quickly in the hot, wet weather, and so do the weeds! Hoeing and weeding keep the women busy every day. If the weeds were not pulled out they would soon choke the crops.

The Congo families use dishes which are made of clay. They find smooth clay, and wet it well. Then they work the wet clay with their hands and bare feet. When it is soft and smooth and easy to work the women shape it into dishes and pots. They are put in the sun to dry and then baked hard in a fire.

The vegetables are brought from the garden in baskets made of bamboo or palm leaf strips. The women carry the baskets on their heads. They have carried loads in this way since they were little girls. If you try this, you will not find it easy, but it will help you to walk well with a straight back.

Like all farmers, the Congo gardener has many enemies. Elephants and wild pigs like his fresh, tender vegetables. Elephants will come for miles for a midnight supper. How would you like to have these great beasts wandering about your garden? The wild pigs root up the yams and eat the beans.

The villagers do not use wire fence because it is expensive. Even if they had it, the jungle garden can be used for only two or three crops. After that the soil becomes too poor. This means that the villagers must always be clearing new gardens. Fences would have to be moved, or the farmer would have to buy new wire.

The villagers often have watchers to keep away the elephants and pigs. They must guard the gardens every hour of the day.

But there is one enemy they cannot keep away. It is the soldier ants! These ants travel in armies, and every villager fears them. When someone shouts that the ants are coming, everyone gets ready to run! Many thousands of ants move out of the forests into the village. They cover the ground like a carpet. These insects live on meat and would gladly eat the villagers. The Congo families know this and hurry away.

When the ants have passed, all the meat has been eaten. Every worm and bug is gone. Everything that was alive, and could not fly, has been eaten. The ant armies can kill the largest animals. Even elephants are eaten if they cannot get out of the way. Nothing is left but the bare bones. When the ants have gone, the villagers come back to their houses. Their homes have had a very good house-cleaning!

Meat and vegetables are not the only food of the Congo people. They catch fish in the jungle streams with nets and basket traps. At times they fish at night. Then they blind the fish with a flaming torch and spear them.

Men of the Congo catch fish with basket traps.

Toronto Star Syndicate

Sometimes the village men go to an elephant hunt. These animals are too big to kill with spears or small guns. The men dig great holes in the ground across the path an elephant may take. They cover the pits with branches, leaves, and grass. If an elephant falls into a pit, it cannot get out and the men kill it.

There is a great celebration when an elephant has been killed. Fires burn all night, and the people stuff themselves with cooked meat. Some of the meat is smoked so that it will not spoil. It is eaten later. The elephant's tusks, or great teeth, are ivory, which is sold to the white traders. Clever workers make beautiful ivory carvings. Knife handles, combs, and piano keys are also made of it. The Congo people use the money they get for ivory to buy things which are made in our factories.

The villagers have no cows. They have no milk from which to make butter, but they have a food to take its place. It is the oil from the palm tree which grows in the jungle. The fruit grows in large bunches. When it is ripe it looks like dates. Men and boys cut down the bunches, and the women and girls put the fruit into hollow log troughs. Then many bare feet go to work! After the fruit is crushed it is boiled in water. The oil comes to the top and is taken off. Palm oil is one of the most important Congo foods.

Each village in the wet forest has a market. As the sun sets the people come together in an open place. The goods are put on the ground for all to see. If a man has money he

Congo dancers. *Toronto Star Syndicate*

buys. If he has no money, he trades. After the marketing is finished, the people stay to talk and sing.

The Congo River is long and deep. Steamships can sail far up stream and bring many new ways to the jungle. The farmers bring their goods to the river villages. Here they are bought by traders and loaded on big ships. Some of these vessels cross the seas to distant lands where jungle goods are needed. With the money he gets from the trader the negro boy buys what he needs from the factories of North America and Europe.

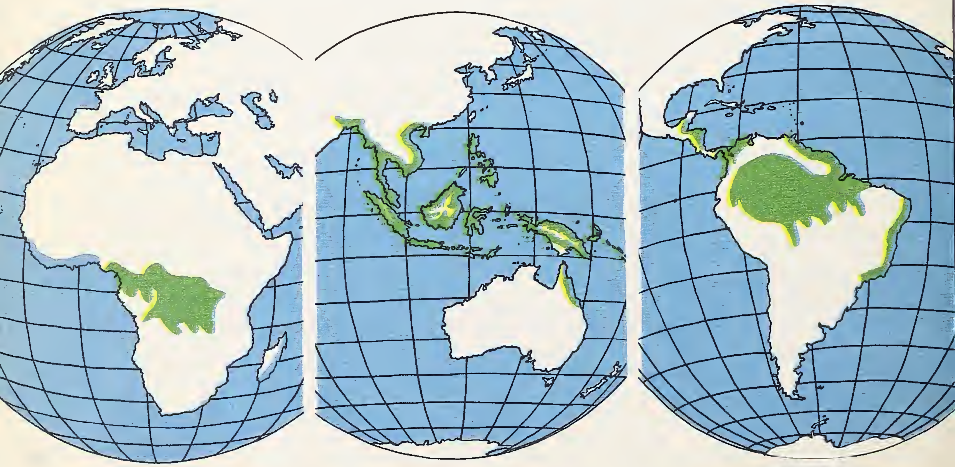
Railroads and highways are being built through the forests. Airplanes are landing at jungle airports. Congo times are changing.

The Congo jungle is one of the world's greatest. There are many other hot, wet lands where the weather is like that in the Congo. The people may have brown or reddish skins, but they live in the same way as the African jungle people. The trees and plants are nearly the same. Bananas, yams, beans, and palm trees are found in all hot, wet jungle lands.

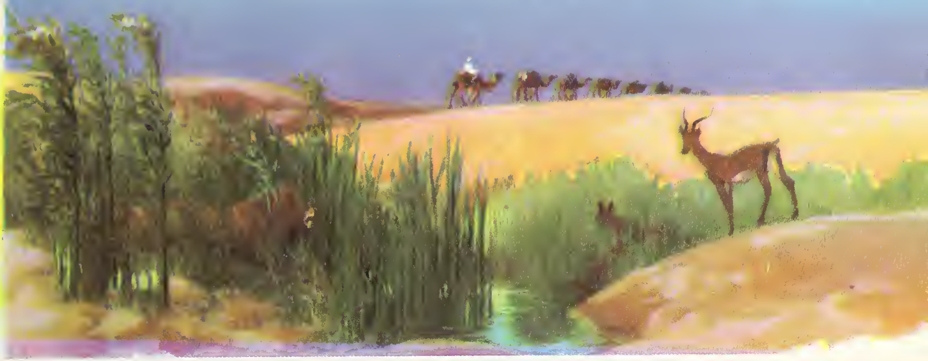
In some jungles the people work on great plantations. They do not make small gardens or hunt. A plantation is a very large farm where one or two crops are grown. Rubber, cocoa, and bananas are often grown in this way. People who work on plantations do not work for themselves. They work for the man or the company which owns the plantation. They are paid money like the factory worker or the miner. With their wages they buy the food, clothing, and other things they need.

Another great jungle is in the valley of the Amazon River in South America. This great river flows into the Atlantic Ocean at the equator.

There are great jungles in the south of Asia. Others are found in the north of Australia and in the islands to the north. Find all these jungle lands on your globe.



The Jungle lands of the world are shown in green.



A camel caravan disappears over the horizon.

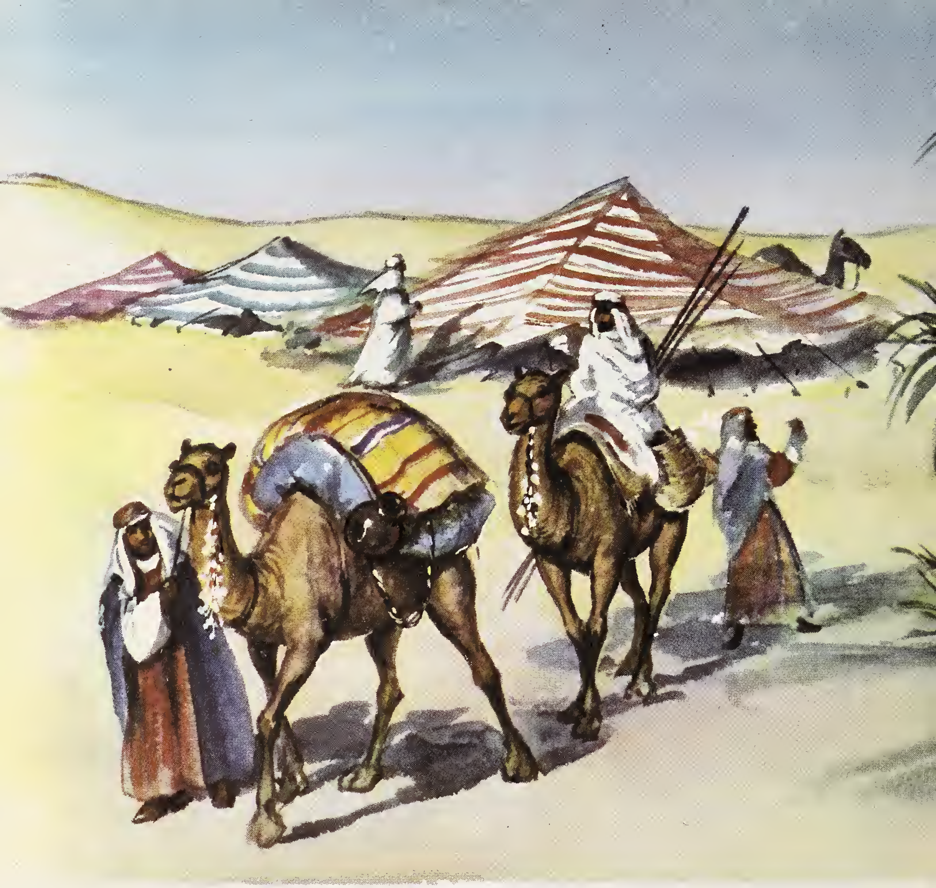
LIVING IN HOT, DRY LANDS

You have read about two ways of living in lands of the Hot Belt. Our last visit to Other Lands tells about another.

Some lands near the equator have very little rain. They have less than the driest part of Canada. During the winter a little rain falls but all through the summer it is hot and very dry. Hot winds blow day after day. They take every drop of water out of the ground.

Hot, dry lands are called *deserts*. Most of them are near the equator. The largest one of all is the Sahara Desert. It spreads across the north of Africa, and is half as big as all of Canada. Next to the Sahara is another desert in Asia. It is in Arabia. You will find it on your globe where Asia and Africa come together. Do you see that Arabia is a peninsula shaped like a fat boot?

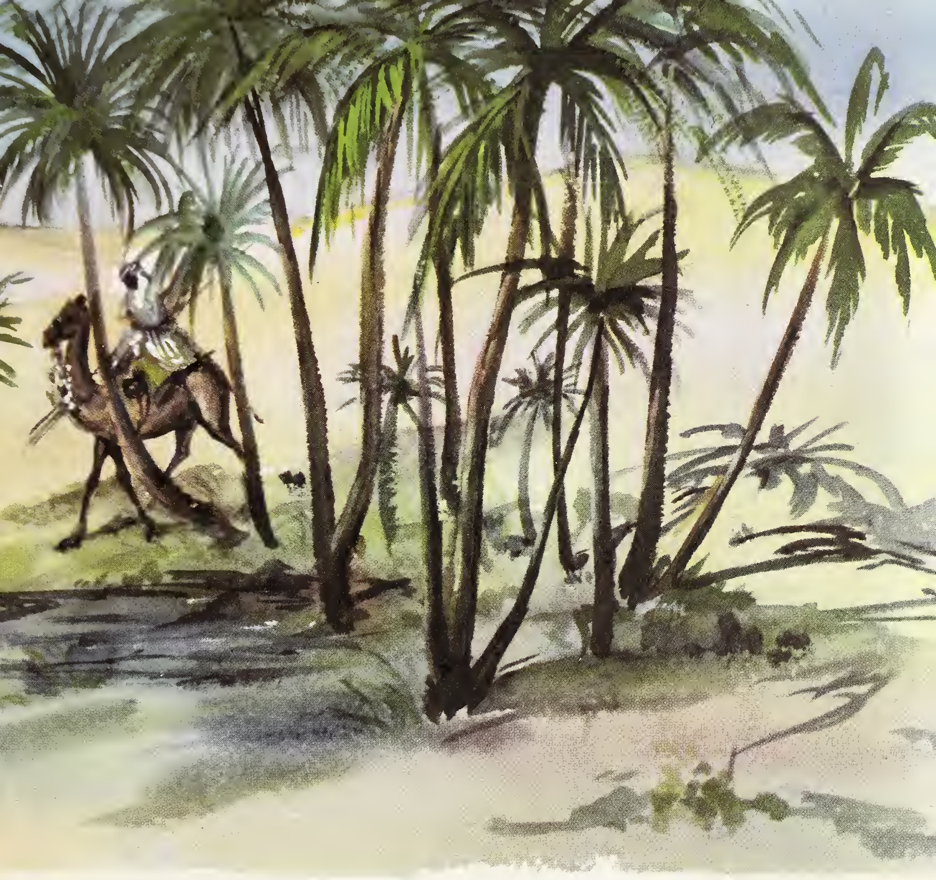
Almost all of Arabia is a desert. It is too dry to grow corn, wheat or other grains which we grow in Canada. It is too dry for ranching, or for fig trees and grape vines. Most of the country is covered with sand. In some places a few plants, bushes, and blades of grass struggle to grow.



The nomads camp near a spring.

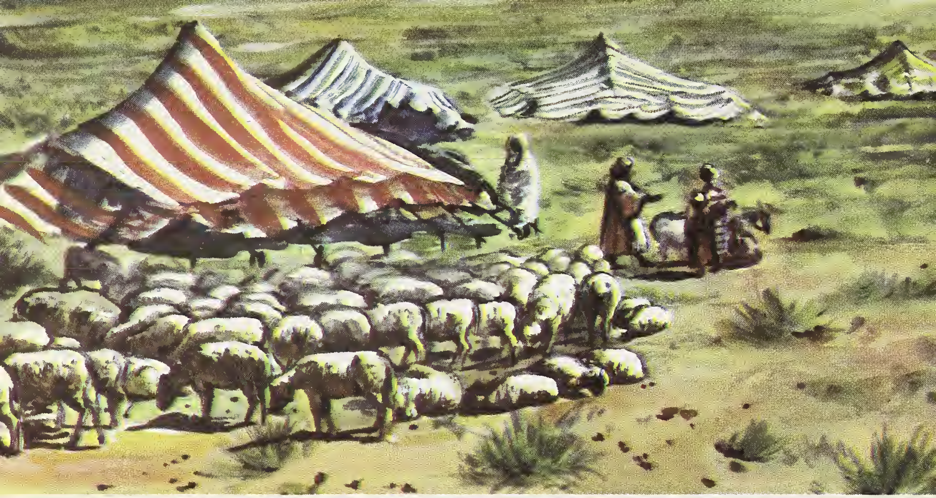
There are a few animals which can live on this poor food. Camels, goats, sheep, and donkeys eat the leaves and twigs of bushes. For a short time in the winter a little rain falls. Then some grass and other plants grow. This is the only time of year that the animals become fat. If there were no animals there, men could not live in the desert lands.

At a few places in the desert there are springs. People



live near the water and not a drop of it is wasted. Some of it is used to irrigate the soil for gardens. Palm trees grow around the spring. This green part of the desert is an *oasis.*

The people who live in the desert are nomads. They are found wherever bushes grow and there is some water. They herd flocks of sheep and goats.



Desert flocks feed on twigs and plants.

The nomads of Arabia are called Arabs. They live in tents. Several families travel together and their tents make a little village. This village can easily be moved from place to place. The leader of a band of Arabs is called the *sheik*. He decides when the families will move and where they will go.

Each day the men and boys take their flocks out from the camp. When the animals have eaten all the twigs and plants nearby, the sheik gives the order to move. The women are told and they begin their work.

The sheik's wife pulls out the pegs which hold up her tent. Down it falls. Then the other women, who have been watching, pull out their tent pegs. The rest of the tent village falls flat. The women spread out the tents and lay the tent poles on them. They roll the tents into bundles and tie them with tent ropes. The family blankets and clothing are stuffed into bags. The women make the bags out of goats' hair. They own very little and packing does not take long.

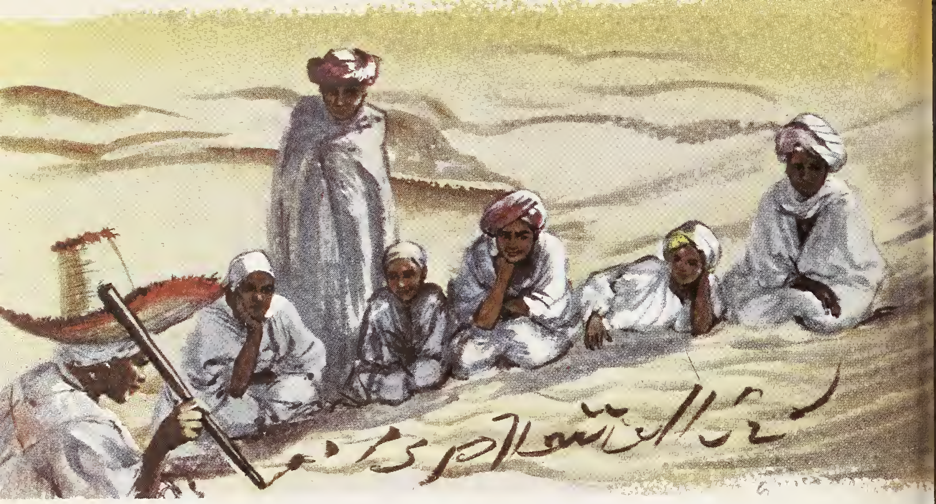
The men and boys lead the camels to the folded tents. The animals are made to kneel. Then the women put the loads on their backs. A camel is a tall animal. If it did not kneel the women could not reach its back. The bags and bundles are tied to the camels' saddles. The men do not help with the loading. "It is women's work," they say.

Four or five Arab bands may move together. Each sheik brings several families with him. The nomads always travel in the same order. In front are the sheiks who travel together on their beautiful horses. Next come the loaded camels. The women, girls, and small children ride behind on other camels. The men and boys walk last. They drive the herds of goats and sheep and the camels which carry no loads.

At noon the sun is high overhead and it is very hot. Then the nomads stop. The women milk some of the sheep and goats. Every one drinks milk and rests.

Soon they move on again. As they travel, the herds eat whatever they can find. The women spin yarn of goat and camel hair as they move along. Later, at the next camp, the women and girls weave the yarn into cloth. It is used to make bags and tents. Sheep wool makes finer cloth. It is used to make warm clothing for the family. Arabia is in the Hot Belt, but the desert nights are cool. Woollen clothes are needed—even in the desert.

One of the sheiks is the leader of all the nomads. He is



School in the desert. The teacher is using the sand as his blackboard.

the head sheik. Late in the day when the sun sinks low the head sheik halts. He shoves his long staff into the sand to mark the place for his camp. Then the other sheiks choose their camping-grounds.

Each family puts its tent near the tent of its sheik. The camels are made to kneel again and off come the bags and bundles. Up go the tents once more. Inside them the blankets are spread out. The men do not help to set up the camp. "It is the women's work," they say—again!

At night the women cut thorn bushes and make a fence of them near the camp. The fence is made into a round pen. The sheep and goats are driven into it. The cage is shut with more thorn bushes so that the animals cannot get through the thorny fence.

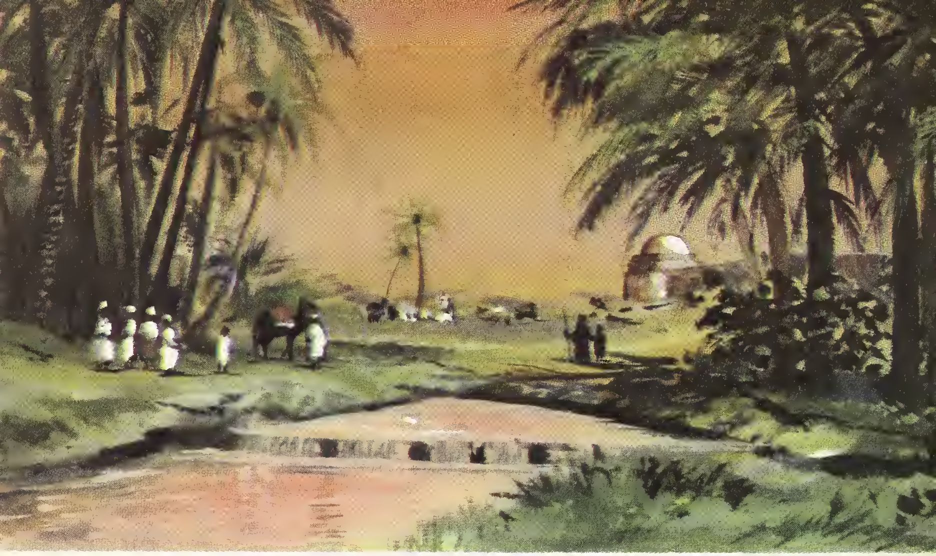
The sheep and goats are milked in the evening and again the next morning. As soon as they get up, the first thing the men do is to milk the camels. The people drink as much milk as they can before they begin the day's work.

During the day the women make butter in a goat skin churn. Sour milk is put into the goat skin bag. The women rock it back and forth until butter forms. The pieces of butter are taken out of the buttermilk and put into a bag of goat skin. The nomads like to eat dates dipped in melted butter. The butter milk is boiled until what remains is thick. It is then made into cakes. When it dries it is as hard as a dry crust and can be kept for a long time.

During the dry summer and fall the herds get little food. At this time they give no milk, and the women bring out the dried buttermilk cakes. Each Arab breaks a cake into powder. Then he stirs it into a cup of water. This makes a cup of buttermilk. Do you remember how your mother cans fruit and vegetables? Women everywhere save food for times when it will be needed.

The nomads often roast locusts in their fires. A locust is a large grasshopper. They often roast a great many and carry them in bags to eat later. Perhaps dried locusts are the Arabs' peanuts and popcorn!

The men and boys take the sheep and goats to new pastures. The boys keep the flock together by throwing stones. They use a sling to do this. The sound of the falling stone tells the sheep or goat which way to go. Their slings are not like the sling shots Canadian boys sometimes use. They are made of a strap which is swung around the head to throw the stone. The nomad boys are straight shots with their slings.



A large oasis in Arabia.

The herds feed until the sun rises high. Then they are driven into the shade of rocks or bushes, where it is cooler. Here they wait until the middle of the afternoon. As the sun sinks they are herded back to camp, eating as they go.

The camels do not pasture with the goats and sheep. Several families keep their camels in one herd, and the men take turns watching them. Other camels are taken to the well to carry water. The well may be a long way from the camp. It is small and deep. The water is pulled up in a leather pail on a long rope. It is put into goatskin bags and brought back to camp. Water is very precious to the nomad.

Living on the oasis is not as hard as living on the desert. The oasis farmer plants vegetables and trees. His farm is small but the land is good. He uses the precious spring water very carefully. Most farmers plant palm trees on which dates grow. The date palms are very tall. The leaves are not thick and let the sunshine through. The farmer plants orange, peach, and fig trees beneath the palms. He also grows alfalfa. This is a tall grass which the animals like to eat.

The oasis farmer lives in a mud house. Palm logs hold up the roof. His furniture is made of palm wood. He uses palm leaves to build his fire.

The house is not built in the oasis. The land there is good soil and the farmer uses it for farming only. The oasis people live in small villages—outside their green island of gardens.

There are no stores in an oasis village. But at the edge of the village there is an open market. On market days the people spread out the things they have to sell. This is where the nomad buys his dates, barley, bread, and beans. He sells cloth of sheep wool and camel hair to the oasis farmer. Sometimes animals are bought and sold.

It is a great day when a caravan comes to the oasis. Caravans of camels travel from one oasis to another. There may be as many as thirty camels in each one. As the animals plod along men walk beside them. In hot, dry lands the camel is very important. He is sometimes called "the ship of the desert." Why?

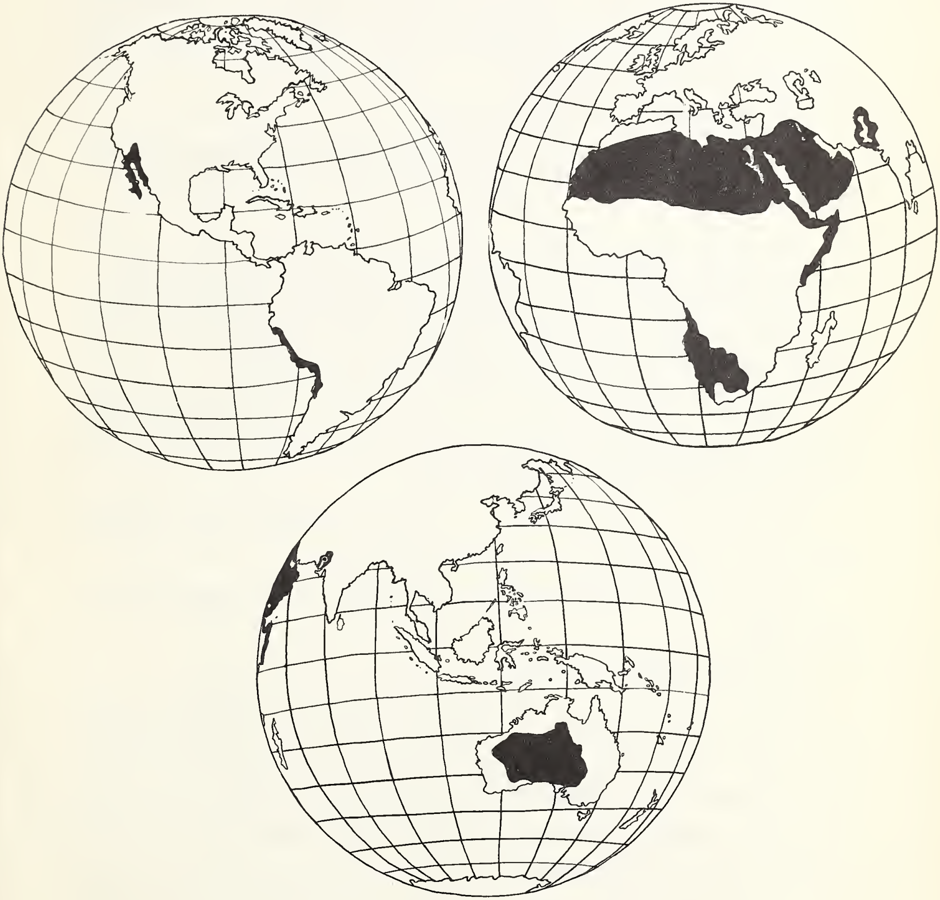
The caravan men are traders. They buy some of the crops which the oasis farmer grows. They also buy from the nomads. In their big bundles they carry goods from far-off lands. The eyes of the desert people shine as the bundles are unpacked! The women can hardly wait to see the tin plates, needles, thread, combs, scissors, and cotton goods. The men want guns, bullets, and knives.

The camel caravan is like a travelling market or store. It is always on the move. When its trading goods are gone the caravan returns to cities on the sea coast for more. The caravan traders are always buying and selling.

Perhaps you think life would be easier on the oasis. But the nomad would not live there. He feels free when he is on the move and would not be happy on a farm. His home is the desert.

Not all of the deserts are in Asia and Africa. There is a narrow desert on the west side of North America. It is around the Gulf of California. There is a narrow strip of desert on the west side of South America. It is in the northern part of Chile and in part of Peru. Most of the centre of Australia is desert. Find these desert lands on your globe.

There are very few people living on these deserts. There are no bands of nomads with their herds of sheep and goats. There are not many oases. Sometimes men build dams across big rivers. Behind the dams are great lakes. The water from the lakes is piped for many miles to the desert. It is spread across the dry ground by irrigation. People come to live in these lands. They plant date palms and fruit trees and the land is no longer a desert. It is a big oasis made by men. In many parts of the world the desert is blooming. Dry sandy soil is changed to good farm land by the magic of irrigation.



These globes show the hot, dry lands of the world.

Conclusion

SOUTHPORT AGAIN

Captain Angus, the twins, David and Skipper were sitting on the beach. A whole year had passed. The children had come back to Southport that day. Ahead of them was the long summer holiday!

David patted Skipper's head.

"My, but it's good to be back," he said. "I dreamed about it all winter."

"So did I," agreed Bill.

"I hope you did more than that," laughed Captain Angus.

"Oh, we did," exclaimed Betty. "We were busy at school. And at home we helped as much as we could."

"I did too," added David. "In our class we learned about living in Canada and other lands. I noticed that all over the world children help their parents."

"So did we," said Betty. "I think mothers and fathers have to work hard in every country."

"They make the way they work fit the land they live in," said Bill.

Captain Angus smiled.

"That's quite right," he said. "I was very happy to get your letters. I could tell that the trips we took together last summer were helpful. It was easy to see that you were doing interesting things at school. I was glad you enjoyed your travels in Canada."

"You have learned many things since last summer. I am pleased to hear you talking about them."

"People of other lands seem to be different. But they aren't really. Everywhere people are busy at the same things. What are they doing? They are getting food and clothing. They are bringing up their children. They are making homes. They are working together. They are helping one another. In different places they do these things in different ways. The differences are very interesting. But the things that are the *same* are best of all, I think."

"Goodness, that was a long speech," said the sailor. "And now I have a surprise for you."

The eager children followed him to the jeep. On the back seat were three large boxes. Quickly they tore off the paper. There were three of the finest globes they had ever seen! Tied to each globe was a card. At the top of each card was printed:

WITH BEST WISHES FROM CAPTAIN ANGUS AND SKIPPER

And below he had written:

You've travelled to a wider world,
To places near and far.
You've learned that men are much the same,
No matter where they are.
You've crossed your country, sailed the seas
To mountains, plains and burning sands,—
And now you're back at home again,
In Canada, from Other Lands.

EXERCISES

PART I

A. Do you know these Social Studies words? You will want to remember them.

1. Current, up stream, down stream, bank, channel, wharf, dock, mouth, delta.
2. Source, creek, tributary, stream, swamp, spring, rapids, escarpment, gorge, river system, watershed.
3. Horizon, bay, shoal, point, sand bar, bluffs, marsh.
4. Gulf, strait, peninsula, isthmus, cape, sea coast, cove, inlet, arm.
5. Plain, prairie, foothills, peak, summit, slope, precipice, range, snow line, tree line, valley, glacier, canyon, plateau, pass, continent.

Use the Index to look up any of the words you may have forgotten. Talk with your friends about them. Use them as often as you can.

B. *Think — Then Give a Good Answer*

1. Why do some river mouths have to be made deeper?
2. Why did David *crawl* to the edge of the escarpment?
3. How is a river gorge formed?
4. If you travelled far enough, could you stand on the horizon? Why?
5. Why are a strait and an isthmus both "joiners"?
6. Would you like to live in a mountain valley? Why?

C. *Things to Do*

1. Use a sand table, or salt and flour, or asbestos powder to make:
    (1) A river system. (The list in A1 & 2 will help you.)
    (2) A lake. (The list in A3 will help you.)
    (3) The ocean. (The list in A4 will help you.)
    (4) The mountains. (The list in A5 will help you.)
2. Collect Social Studies pictures that show things you have read about in this Part. Find them in newspapers and magazines. Keep them in large envelopes. Have one for each of the parts shown in Exercise A.
    Paste these pictures in books, or on large sheets of paper. On each sheet print a story telling about the pictures.
    Your class could be divided into groups to do Exercises 1 and 2.
3. Make a list of the Social Studies words you have read in this Part. Rule your page as it is here. Fill in new names as you meet them during the year.

Social Studies Words	Name	Continent (Fill in this row after you read Part II.)
Rivers	Nile	Africa
Lakes	Huron	North America
Seas	Mediterranean	Between Europe and Africa

(Fill in more words as you come to them during the year.)

C.

4. Find stories about Rivers, Lakes, Mountains, Plains, and Oceans. Read them to the class.
5. Pretend you are David or one of the twins. Tell the class about Southport. Tell about one of your days with Captain Angus, or about your trip home from Southport.
6. With your teacher, plan a field trip to see as many different land and water forms as you can. Make a list of the ones you see.

PART II

A. Do you know these Social Studies words?
hemisphere, equator, sphere, season, symbol, key, tropics.
Write a good sentence about each.

B. *Think – Then Give a Good Answer*

1. Why do we use maps?
2. Why is a globe the best map?
3. Why is it usually hot near the equator?
4. Why is it cold near the North and South Poles?
5. Why is a flat map of the world not a true one?
6. In which part of the world would you like to live? Why?
7. Why are spring and fall called the "in between" seasons?

C.

1. Most girls and boys like to study a globe. It is very handy to have one at home. Perhaps you could ask for one for your birthday or for Christmas. The globe will help you each year in school. Your teacher will help you to choose a good one.
2. Keep a *tidy* notebook. Write as neatly as you can. Collect pictures to place in it. Use your ruler to underline headings. Leave two pages at the beginning. Use these pages for your "Table of Contents."
3. Use the globe to find different routes from North America to each of the other continents. Through what oceans, seas, bays, and gulfs do you pass?
4. Write the names of the continents and oceans on slips of paper. Put them in a box. Draw them out, one by one. As you do this, point out each continent and ocean on the globe. Try to make up a globe game of "Continents and Oceans."
5. Find all the directions shown on page 45 in the school yard, and at home. Do this at noon by using your shadow.
6. Use a round ball and a flashlight to explain to Mother and Father why we have day and night.
7. Show your parents one way in which flat maps are made from a globe. Use a hollow rubber ball. Cut it as you are told on page 60. If you cannot get a ball, use the skin of an orange. Be sure to cover the table with paper before you begin cutting. You may eat the inside of the orange!
8. Are you interested in learning more about finding direction? Ask your teacher to tell you about the compass. Go to your class library or to the Public Library to find out more. Bring a compass to school. Tell the class about it.
9. Here is a "continent" game:
   (a) Make a list of continents in alphabetical order. (Africa is first.)
   (b) Make a list of continents in order of size with the largest first. (Asia is first.)

9. (c) Using your globe, trace the shape of each continent. Use tissue paper for this. Cut out the shape of each continent. Practise until you can name each one. Paste the shape of each continent on cardboard. This will make it last much longer.
   (d) Put the cardboard continents into a hat. Name each one as you draw it out. Can you make up other continent games?
10. Cut apples (round ones), or oranges to show:
    (a) The Northern Hemisphere
    (b) The Southern Hemisphere
    (c) The Eastern Hemisphere
    (d) The Western Hemisphere

PART III

A.
1. Do you know these words?
   Skid, litter, beast of burden, vehicle, axle, spoke, rim, hub, chariot, coach, ox yoke, locomotive, cow catcher, ties, spike, concrete, asphalt.
   Canoe, galley, cannon, propeller, submarine.
   Balloon, dirigibles, glider, helicopter, monoplane.
   Talk about them as often as you can.
   Write a good sentence about the ten that interest you most.
2. Do you know these people?
   James Watt, George Stephenson, Richard Trevithick, Henry Ford, Robert Fulton, Montgolfier brothers, Von Zeppelin, Orville and Wilbur Wright, McCurdy, Alexander Graham Bell.
   Tell why each one is famous.

B. *Think — Then Give a Good Answer*
1. Can you think of another way that the wheel may have been discovered?
2. Why were tires invented?
3. Why were early coaches uncomfortable?
4. Why are Indian trails usually crooked?
5. Why are bicycles so popular in some countries in Europe?
6. Why did a flag man go ahead of the first locomotive?
7. Why did many early trains jump the track on curves? How were they improved?
8. Why was it hard to build railways in Canada?
9. How did the C.P.R. help Canada?
10. Why did people laugh at the "horseless carriage"?
11. What troubles did early car drivers have?
12. How have cars been made better?
13. Why is it a good thing to have Elmer the Elephant flying in front of your school?
14. Why were cannons placed on ships?
15. Why does a steel ship float?
16. What is the difference between a glider and an airplane?
17. What did the Wrights do when people laughed at them?
18. Why do some flying men like the helicopter?
19. How have airplanes been made safer?
20. Why do we sometimes say, "The world is getting smaller"?

C. *Things to Do*
1. Make a Picture Book of:
   (a) Vehicles, or
   (b) Trains, or
   (c) Ships, or
   (d) Airplanes.
   Get your pictures from newspapers and magazines or draw them.
2. Make a mural to show:
   How Man Invented the Wheel
3. Collect or draw pictures to show how
   (a) Trains, or
   (b) Cars, or
   (c) Ships, or
   (d) Airplanes
   have changed since they were invented.
4. Pretend you are one of the men in Exercise A-2. Tell the class about your most exciting day.
5. Have a display of
   (a) Electric Trains
   (b) Toy car models
   (c) Ships
   (d) Model airplanes.

Invite other classes to see it.

6. Does anyone in your class fly model airplanes? Have a flying contest in the school yard. If no one can do this, form a group to learn how it is done.
7. Try to get a model steam engine. Bring it to school. Explain to the class how it works.
8. Invite to your class
   (a) A bus or truck driver
   (b) A train engineer
   (c) A sailor
   (d) An airplane pilot
   Ask them to tell you about their work.
9. We still use many of the old ways to move loads. Keep your eyes open. How many can you find? Make a list of them. For example:

Way of Moving Load	*Where?*	*Load Moved*
1. Carrying	*Grocery Store*	*Bag of Groceries*
2. Dragging	*Railway Station*	*Trunk*
3. Using a skid		
4. Litter		
5. Beast of burden		
6. Rollers		
7. Carts two-wheeled four-wheeled		

10. Make a book of "Animal Friends and Helpers." In it paste pictures of animals which help men. Under each picture explain how the animal helps. Also tell in which country the animal lives. See page 65 for two examples as a beginning.
11. Is there a museum in your community? If there is, be sure to visit it. Are there any Transportation exhibits. If there are, tell your class about them.
12. Make a class display to show how Transportation grew up. Choose groups to do this. Use plasticine, paper, and wooden models. Print signs to explain the exhibits. Invite other classes, or your parents, to see it.
13. Here is a list of interesting places:
    (1) A Blacksmith's shop. (Why are there so few of these to-day?)
    (2) A Bicycle Shop.
    (3) A railway shop or "round house."
    (4) A service station, or Garage, or Automobile Sales Room.
    (5) A Highways Department Workshop.
    (6) A Boat House or Ship Yard.
    (7) An airport or airplane factory.
    Visit as many of these places as you can. Tell your classmates about them. As you listen to other boys and girls, think of a good question to ask.

PART IV

A. 1. (a) Do you know these Social Studies words?

Communication, language, dialect, alphabet, papyrus, cuneiform writing, stylus, parchment, pulp, type, Linotype machine, cancelling machine. Telegraph, Morse Code, telegram, cablegram, telephone, radio, microphone, announcer, television.

Talk to your classmates about these words. Can you use each of them in a sentence?

(b) Do you know these men?

Johannes Gutenberg, William Caxton, Samuel Morse, Alexander Graham Bell, Marconi.

Go to your school library or to the nearest Public Library. Find out what you think are six important things about one of these men. Ask the librarian to help you. Tell your class what you have discovered.

B. *Think — Then Give a Good Answer*

1. Why did men begin to draw simple pictures?
2. Two of man's greatest inventions were round. What were they?
3. When monks wrote books why were they expensive?
4. Why did wooden type soon wear out?
5. Why is a printing machine called a "press"?
6. What carries the message along the telegraph wire?
7. What is a local call? A long distance call?
8. Remember these numbers:
   Your own number ————————————
   Your doctor ————————————
   Police Station ————————————
   Fire Department ————————————
9. How has the wireless telegraph made travelling by water safer?
10. How is television different from radio?

C. *Things To Do*

1. Find out about the sign language used by the Indians. Draw some of the signs in your notebook. If there are no books about this in the school library, ask your teacher, or the librarian, for help.
2. Make a class scrap book of Communication. Use newspaper and magazine pictures. Choose groups to do this.
   Group 1 — Signs, sign language and alphabets
   Group 2 — Printing
   Group 3 — The Post Office
   Group 4 — The Telegraph and Telephone
   Group 5 — Radio and Television
3. Here is a list of interesting places:
   1. A printing shop
   2. A newspaper printing plant
   3. A Post Office
   4. A telegraph office or a railway station
   5. A radio station
   6. A television station

   Try to arrange a trip to one or more of these. Tell your classmates about it.
4. Has your class decided to go to one of the places in Number 3? Write a letter to the proper person asking for permission. Your teacher will help you with this.
5. Write the Arabic numerals one to ten.
   Write the Roman numerals one to ten.
   Try to add, subtract, multiply and divide with Roman numerals. Do you think the Roman numerals are better than ours? Why?

PART V

A. Do you know these Social Studies words?

How Men Learned to Farm

Domesticate, herd, nomad, grain, sickle, kernels, flail, millstones, irrigation, furrow.

The General Farm

Rural, concession, community, separator, "chores," hay, till, cultivator, seed drill, hay loader, hay baler, straw, binder, sheaves, shocks, stooks, combine, granary, silo, forage harvester.

The Dairy Farm

Pasture, "stripping."

The Cattle Ranch

Ranch, range lands, branding, rodeo, stampede, steers.

The Wheat Farm

Buffalo, fallow, stubble, disc harrow, elevators.

The Fruit Farm

Niagara Fruit Belt, Okanagan Valley, Annapolis Valley, blossom, spraying machine, fertilizers, Fruit Growers' Association.

The Forest Community

Lumber, pulp and paper, lumberjack, bunks, log jam, dynamite, booms, boomsticks, sawmills, pulp mill, spruce, pine, fir, birch, maple, acid, bleach, sizing.

The Fishing Community

Salmon, cod, spawn, fishway, gill nets, iron chink, dories, Grand Banks, trawlers, trawls, fillets.

The Mining Community

Nickel, ore, prospectors, mine, mine shaft, miner's helmet, miner's lamp, hoist, cage, drills, scrapers, smelter, refinery, silver, gold, copper, lead, uranium.

The Small Manufacturing City

Settlers, main street, business section, farmers' market, time clock, office, assembly shop, raw materials, products.

Talk about these words with your classmates. Use each one in a sentence. Use the index and your dictionary for help.

B. Think—Then Give a Good Answer

How Men Learned to Farm

1. Why did people of the long ago eat their food where they found it?
2. Tell how wild animals were captured and tamed.
3. Why do nomads move from place to place?

The General Farm

1. What are the two kinds of cattle found on the general farm?
2. Why has the farmer less to do in winter?
3. What does a hay-baler do? A forage harvester?
4. Why is the farmer's work not as hard as it was years ago?

The Dairy Farm

1. How has milking been made easier to-day?
2. Why is milk cooled as soon as possible?
3. What are some things the dairy farmer must do during the winter?
4. Why is a cow sometimes called a "living factory"?

The Cattle Ranch

1. Why are the cattle kept near the ranch house in winter?
2. Why does the rancher plant trees around his houses and barns?
3. Tell how a ranch boy may help his father.
4. Why are cattle branded?
5. What happens at a rodeo?
6. Why are some steers shipped to Ontario and Quebec?

The Wheat Farm

1. Why have the buffalo almost disappeared?
2. Why is "spring" wheat planted on the prairies?
3. Why are gardens sometimes hard to grow on the prairies?
4. Why is some stubble left on top of the soil?
5. Why are grain elevators built near railroad tracks?

The Fruit Farm

1. Is there much rain in the Okanagan Valley? How do you know this?
2. Why is there no irrigation in the Niagara Fruit Belt?
3. Why does the fruit grower spray his trees so often?
4. Why are there many strangers in a fruit growing community at harvest time?
5. How does our government help the fruit growers?

The Forest Community

1. Why do some lumberjacks build their houses on rafts? Where do they do this?
2. Explain how a log jam may start. Tell how it may be cleared.
3. What is a slab? a board?
4. Tell briefly how paper is made.
5. What is the worst enemy of the forest community? Why?

The Fishing Community

1. Why do some fishermen have small farms?
2. Why is fishing no work for a weakling?
3. Why are salmon fishways built?
4. In the life of the salmon what do you think is the most amazing thing?
5. What happens to a salmon in the "iron chink"?
6. Why are many cod found on the Grand Banks of Newfoundland?

The Mining Community

1. How was the first Ontario nickel ore discovered?
2. What does a prospector do?
3. For what is the mine shaft used?
4. Why are electric fans used in mines?
5. Why do miners wear helmets?
6. Why is uranium important?

The Small Manufacturing City

1. Why are cities almost always near water?
2. Why does a factory worker punch a time clock?
3. Why are city stores busy on "pay day"?
4. Why are railways important to a manufacturing city?

C. *Things to Do*

1. Make a mural to show how men learned to farm.
2. Plan a trip to one of the communities in Part V. Think about:
   (1) Ways of travel
   (2) How to get there safely
   (3) What to see
   (4) Questions to ask
   (5) Writing letters to ask permission
   (6) Choosing groups to make records about certain things
   (7) Writing letters of thanks
3. Choose groups in the class. Have each group make a scrap book of a community in Canada.
4. Collect can and box labels from farm, fruit-growing, fishing and manufacturing communities.
5. Find stories about Canadian communities. Read them to the class.
6. Make a list of all the machines you have read about in this part. Get pictures of as many as you can.
7. Ask one or more of these workers to come to your class: Farmer, dairyman, rancher, fruit-grower, miner, lumberman, fisherman, factory worker. Invite them to tell about their work. Ask them many good questions.

PART VI

A. Do you know these Social Studies words?

Igloo, caribou, whale, blubber, umiak, harpoon, walrus, seal, Arctic fox, polar bear, Arctic hare, kamiks, kayak, tundra, Lapland, reindeer.

Climate, olives, oranges, lemons, olive oil, figs, raisins, California, Chile.

Peru, Bolivia, llama, alpaca, quinoa, dyes, fiesta, tortilla, adobe, jewellery, Alps Mountains, Switzerland.

Jungle, elephants, Congo River, negro, bamboo, tse-tse-fly, monkeys, bananas, yams, soldier ants, ivory, palm oil, plantation, Amazon River.

Desert, camels, oasis, Arabs, sheik, thorn bush, goat skin churn, dates, locusts, sling, alfalfa, caravan, Gulf of California.

B. Think—then give a good answer.

The Eskimo

1. Why is the igloo a good winter home for the Eskimo?
2. Why is the seal important to the Eskimo?
3. Why does the Eskimo need no refrigerator in summer?
4. What does an Eskimo father teach his son?
5. Why are reindeer being brought to the lands of the Eskimo?

B. *Living in Other Temperate Lands*

1. Why could not Canadian farmers grow their crops in Mediterranean countries?
2. Why do many people from Northern Europe visit the Mediterranean?
3. Why is olive oil important to Mediterranean people?
4. How do men make oases in desert lands?
5. Why is much Australian fruit dried or canned?

Living in Mountain Lands

1. Why are llamas and alpacas important to the Indians of Bolivia?
2. Why is the llama a good climber?
3. Tell about the inside of the Indians' hut.
4. Tell how the Indian farmer may earn extra money.
5. How are the people of Switzerland different from the plateau Indians?

Living in Hot, Wet Lands

1. Why are there large rivers in jungle lands?
2. Why is the Congo house a good one for a hot, wet climate?
3. Why are Congo houses usually small?
4. Why are there no oxen and horses in the Congo Valley?
5. Why do the Congo people have a celebration when an elephant has been killed?
6. Why is palm oil important in the Congo lands?
7. Why are times changing in the Congo valley?
8. In what ways are all jungle lands the same?

Living in Hot, Dry Lands

1. Why are animals so important to the desert people?
2. Why do the desert nomads live in tents?
3. Why do the Arabs need woollen clothing?
4. Why do desert women dry buttermilk?
5. Why does the desert farmer live *outside* the oasis?

C. Things to Do

1. Choose groups to collect pictures of:
    (1) The Eskimo
    (2) Mediterranean people
    (3) Indian plateau dwellers
    (4) Jungle people
    (5) Desert nomads and farmers

   Have each group tell the class about its pictures.

2. Make a mural to show how people live in one of the lands of this Part.
3. Tell your class how the people in this Part make the way they live fit their land.
4. Choose an animal about which you have read in this Part. Make a model of it in plasticine, or carve it in soap.
5. Pretend you have visited one of the countries in Part VI. Tell your classmates about your trip.
6. Try to find a person who has visited one of the lands about which you have read in this Part. Invite him or her to tell the class about it.
7. In which country of Part VI would you like to live? Why?
8. Why is the camel a good beast of burden in the desert lands?

9. Pretend you are a boy or girl of one of the Other Lands of Part VI. Tell the class about yourself. Explain to them how you live. Be sure to mention
   (a) The way you are dressed. Tell why your clothing is the best for your climate.
   (b) How you help your parents.
   (c) Your school, or what you are taught by your parents.
   (d) How you play.
   (e) What you hope to do when you grow up.

   Part VI will help you to start this exercise. Go to your class library, or to the Public Library to find out more.

10. Find each country of Part VI on your globe.
    (a) In which hemisphere is it? Northern or Southern? Eastern or Western?
    (b) In which Belt is it? Hot Belt? Temperate Belt? Cold Cap?

11. You have read about many communities and countries in Parts V and VI. There are many ways of living that are alike in several countries. As you meet new people you find that they do many things which are the same. Talk about these things in class. Here are some ideas:
    (1) The children help their parents in many lands.
    (2) The market place is found in many countries.
    (3) People enjoy themselves in every land.
    (4) Everywhere the parents work hard.
    (5) The farmer is a very important person.
    He farms his land in many ways.
    He makes his crops fit the climate of his country.

    (6) The beast of burden helps his owner in many countries.

12. Would you like to see one of the Other Lands of Part VI?
    (1) Which one would you like to visit? Why?
    (2) Explain to the class how you would get there. Show them the route on the globe.
    (3) How would you travel? Why?
    (4) Which things do you want to see most? Why are you interested in them?
    (5) What would you like to bring home from the Other Land? Why?

13. Do you like to have visitors? Would you like to have a boy or girl guest from one of the Other Lands of Part VI?
    Tell the class how you would entertain your guest. Where would you go? Why?
    Would you like to give your guest a present? Perhaps he would like one that came from your community. What would you choose?

14. Do you collect stamps? It is a good hobby. Try to get stamps from each country in Part VI. Show them to the class. Talk about the pictures on each stamp.

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